

**The Introduction of Information and Communications
Technology into Physical Communities
An Action Case Study**

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For my mother, Joan

Abstract

The role of information and communications technology, which has been mostly limited to use within business and government organisations, is now moving through society and touching all sections, groups and individuals therein. Information and communications technology is now pervading physical, or real, communities, as opposed to communities created through information technology, virtual communities. For the purposes of this research study, a traditional view of community is taken and defined as people sharing experiences and interrelations with others living in a physical locality, comprising all residents, workforce, official bodies and authorities that exist or have business within a defined physical area. There is potential for positive change within physical communities through the use of such technology to change the way people work, interact with local government, and the way people access information. There are also potential dangers that cannot be ignored. Unfortunately, due to the nature of the technology and the speed of advances in the technology, some dangers may be overlooked. Much of the research work concerning these issues tends to be focused on the technological aspects of the phenomenon, or takes a utopian view of the implementation of technological advances within communities.

This research study takes a more critical view of the issues involved and is based upon an exploration of the issues associated with the introduction of information and communication technologies within the physical community. The study uses an ethics-based framework to explore these issues, together with a unified conceptual framework covering all aspects of the research study. An ethics-based approach was

chosen because of its applicability to issues that have potentially harmful social effects, and was closely related to prior research work. An action case research method was employed to engage with a selected research subject. This allowed the researcher to conduct the study while acting close to the main participants within a community.

Research uncovered a number of research findings or lessons, including, but not limited to, the finding that: the introduction of ICT into physical communities has divergent issues that stem from a broad spectrum of domains; arguments portraying aspects of projects as being amoral must be countered, that ethics is not just about big questions; that ethical analysis is important, both to the subject area of this research and others; the contingent nature of IS research in context means IS research cannot follow the waterfall model. Research also led to the formation of two important ideas, the notion engagement and in-situ ethical analysis.

Chapter 1

The Area of Concern

1.1 Introduction

The purpose of this chapter is to provide the reader with an understanding of the research issue and its context. The chapter will provide a statement of the area of concern, justification of this choice and discussion of a general approach for examining or exploring the domain. The chapter will also frame the area of concern within specified aims and objectives formed from an initial discussion of its main themes. To begin, the following represents a statement of the research issue that constitutes the formal basis for this research study.

This research study considers:

The introduction of information and communications technology (ICT)
into the physical community, from an ethical viewpoint or stance

For the purposes of this research study, a traditional view of community is taken and defined as people sharing experiences and interrelations with others living in a physical locality, comprising all residents, workforce, official bodies and authorities that exist or have business within a defined area (Falk, 1998; Kling, 1999; DoE, 1990; European Communities, 1997).

This research issue was prompted by an awareness of the increasing role of information and communications technology (ICT) in society, with a focus on the

introduction of ICT into the physical community. Information technology is moving away from traditional business related areas and into the wider community, through advances in information and telecommunications technology, driven by whole communities gaining access to broadband technologies through cable operators. These are providing society and its governing institutions with new ways of working, business operation, interaction with local government, and social or community services.

There is a need to step back from the common ideas behind the use of such information and communications technology within physical communities. These ideas seem to be based on either a utopian view of the application of ICT within communities, or a view that favours virtual communities created through the technology, communities that are devoid of physical locations in time and space. Such work focused on the virtual does not consider how existing communities and people within such communities will be affected by the technology. Even when a critical eye is cast upon this issue, it seems that the here and now is discounted with an emphasis on far distant apocalyptic stories of societies devoid of human morals (Slouka, 1995). Indeed, Duff (2002) has shown that the general state of academic activity concerning the information society “is not in a healthy condition”, albeit from a teaching perspective. Given that he also considers the ‘new’ society to be as structurally flawed as the industrial society, with problems such as inequality, poverty, commercialism and prejudice, then this condition is perhaps of greater importance.

A period of exploration of this domain is needed to try to understand the true relationship between information technology and the physical community. Although advances in ICT may present opportunities to develop business and may lead to social development, care must be taken to ensure all members of the community have access to, and use, such services. The creation of communities comprising those with access to information and those without could lead to an unequal community and potential social problems. Providing public access to ICT may lead to social and other benefits. However, “a robust community cannot be built out of technology alone. It must retain community purpose...” (Falk, 1998). In such a community ICT can only be effective as part of a co-ordinated community information plan (Byrne and Wood-Harper, 1998; Mosco, 1998).

The introduction of information technology into the workplace can be used to illustrate the potential harm that may be caused through the introduction of ICT into communities. When information technology first entered the workplace, it changed the lives of office workers in profound ways. In certain circumstances, information technology was used as a destructive tool to re-engineer the office with little regard to the consequences for workers (Greenbaum, 1995). If one considers what happened in the workplace due to the haphazard approach of the introduction of information technology, then the potential for harm as ICT is introduced into the community becomes clear. If there are to be new ways of working, business operation and social interaction, then this will change the day-to-day lives of all those living and working within the community.

The introduction of ICT does not only change the community as a whole but also impinges on the lives of everyone therein. Mason, *et al*, (1995) discuss how the use of information technology, through the interpretation of information, can shift burdens of responsibility and influence people's decisions. They further call for fair information practices, where all of the factors behind information handling and its delivery are guided by respect for the receivers of that information. For example, if information is made available through ICT, does this create a burden for people within the community to seek that information? If we are to avoid the potential harm that may result from the introduction of ICT into the community and provide information fairly then careful guidance will be required.

Through the ages, ethical theories have been available to guide mankind's actions in the social realm. Moreover, as the information society is created, a new social contract between citizens and governing bodies may need to be established, further showing the importance of ethical reasoning for such endeavours (Mason, *et al*, 1995). Using the conceptual framework described below and an ethical analysis framework, this research aims to apply these theories to provide insights that may guide action taken with regard to the introduction of ICT into physical communities. This discussion coupled with a review of the literature pertaining to information society issues suggests that the introduction of ICT into the physical community is a domain that could benefit from a general exploration of the area with an ethical focus.

The remainder of this chapter is organised as follows. Firstly, an outline description of earlier research and a conceptual study that led to an interest in ethical theory within the IS discipline and the formation of an ethical stance is detailed. Following

this, an ethical analysis framework or methodology is defined. The next section focuses the research issue by stating formal aims and objectives. This is followed by a summary of the following chapters of this thesis.

1.2 *Ethical Theories within the IS Discipline*

The initial interest of the researcher concerned requirements analysis and the role of methodology within the information systems discipline. For example, the researcher considered the notion of hard and soft systems within IS methodology discourse. During this phase of the study the process of requirements capture and in particular the acquisition of tacit knowledge were the main focus of research. While considering this work, the researcher became uncomfortable with some of the ramifications of the acquisition of tacit knowledge. The researcher considered this work from an ethical perspective. By framing these questions or concerns within an ethical context, the researcher became aware of the potential use and role of ethical thought within the IS discipline. This process led to further interest in ethical concerns within the information systems discipline.

Research proper began with an initial conceptual study, investigating the role of ethics and ethical theory within the information systems discipline. This initial study considered the idea that there may be a dominant decision style, applied to ethical concerns within the IS discipline. The study utilised the Jungian typology (Quenk and Quenk, 1982; Mitroff, 1983; Myers and Briggs, 1980), and used ideas from Mitroff and Kilman (1975) and Mason and Mitroff (1973) to suggest that information systems professionals would tend toward a sensing-thinking (ST) decision style. The study concluded that the dominance within the IS discipline could lead to either a

rationalistic choice of ethical stance or an implicit acceptance of the ethical stance within IS methodology.

Through this work, relating to the dominance of ethical thought within the IS discipline and the dominant ethical stance of IS methodology (Byrne and Wood-Harper, 1998,1997), the researcher formed an initial ethical viewpoint or stance. This stance arose after questioning the above ideas concerning the use of the Jungian typology or decision style. The researcher, while still holding to the conclusions of this study, questioned the use of the Jungian typology to consider people's ethical positions. While the framework may be useful from a conceptual perspective, to use it within a real situation to investigate the ethical quandary faced by actors therein is questionable from a moral and practical standpoint. Attempting to attach not only ethical beliefs but also the reasoning behind these beliefs to individuals within a situation is fraught with moral and practical dilemma. From this work and a review of relevant ethical theory and practice, examined in detail in Chapter 2 of this thesis, a revised ethical stance emerged, which rests upon the idea that there are multiple ethics held by actors within a situation of ethical concern. This can be expressed as:

The basic tenet of the stance is that ethical theories and analysis do not provide answers to ethical quandary, they do not tell us what is right or wrong or what ought to be. Instead, by using ethical theories and analysis, an exploration of the situation is made possible which may lead to a greater understanding of the situation and the ethical concerns therein.

Wood-Harper, *et al*, (1999) have proposed a theoretical framework that acts as a “basis and rationale for conducting ethical analysis.” This framework encapsulates the ideas behind the ethical stance mentioned above. Moreover, the framework leads to understanding by examining the situation and the ethical perspectives of those involved. This framework, detailed in Chapter 2 of this thesis, will form an ethical analysis framework to be used throughout the fieldwork part of the study, and is briefly described in the next section of this chapter.

1.3 Ethical Analysis Framework

This section explores the ethical analysis framework that will be used to explore the area of concern. The framework draws from the work of Wood-Harper, *et al*, (1996) and Wood-Harper, *et al*, (1999) providing coherence, structure and validity by basing it within previous legitimised work. Each section below presents an outline of each element of the framework and how it relates to this particular research study. This is followed by a summary that presents the framework as a coherent whole and also considers the importance of the framework to the research domain.

1.3.1 Soft Systems Methodology

Soft Systems Methodology (SSM) is a problem solving approach developed from systems engineering. Researchers found that systems engineering attempts failed when applied to messy, changing and ill-defined situations. SSM as a methodology grew from this and is viewed as a “problem solving methodology suitable for messy problem situations” (Checkland, 1989). Within SSM, messy or ill-defined problem situations are tackled through a learning system and a process for managing purposeful activity through human activity systems. However, purposeful activity can

be interpreted in different ways, so in order to express purposeful activity one needs to talk of the worldview, or *weltanschauung*, of participants or actors within the problem domain. SSM comprises seven stages, but as there are many ways in which SSM can be used, accordingly, the seven do not have to be strictly adhered to. The seven stages are split between the real world and systemic or conceptual thinking about the real world. The stages range from the formulation and expression of the problem situation, through the conceptual modelling of the human activity systems, to the comparison of these models with the real world. This allows for a debate about possible changes in the problem situation that are systemically desirable and culturally feasible, which may lead to actual changes to the problem situation (Checkland, 1981,1989; Checkland and Scholes, 1986).

SSM is particularly suited to this study because of its ability to explore messy and changing situations and situations where the objective is ill-defined, through learning. Moreover, SSM provides a strong foundation or structure for the analysis of the situation and the subsequent ethical exploration.

1.3.2 Stakeholder Analysis and Assumption Surfacing

“A basic tenet of moral theories is to treat people with respect, which can be done only if the interests of all concerned people are honestly considered” (Messick and Bazerman, 1996). Stakeholder analysis is a process that attempts to achieve this by providing a means to expose the process, making it explicit. In this analysis, the definition of a stakeholder is taken as: “any individual, group, organization, or institution that can affect as well as be affected by an individual’s, group’s, organisation’s, or institution’s policy or policies” (Mitroff and Linstone, 1993).

The process begins by identifying stakeholders within a given situation, using the definition above as a guide. A stakeholder map is then drawn to aid in the analysis of the stakeholders and their relationships or influences. Generally, people posit different behaviours to stakeholders, they make different assumptions about them. Assumption surfacing allows these assumptions to be made explicit. By considering the importance and certainty of the assumptions, a more complete picture can be formed.

Wood-Harper, *et al*, (1996) suggest the use of stakeholder analysis and assumption surfacing for ethical analysis, to tease out the ethical perspectives of those involved. This discovery can be viewed as a special case of stakeholder assumption surfacing, through a learning process (Wood-Harper, *et al*, 1996). The introduction of ICT into the community has the potential to touch a wide spectrum of people and alter their day-to-day lives. It is generally the case that the more complex or messy the problem, the more stakeholders will be involved, and the more assumptions will be implicitly made (Mitroff and Linstone, 1993). Given this, the use of stakeholder analysis may ensure that the interests of all those concerned within the community can be explicitly examined.

1.3.3 Normative Ethical Theory

The framework suggested by Wood-Harper, *et al*, (1996, 1999) includes normative ethical theory as a basis for considering the ethical stances of those involved in a situation of ethical concern. Normative ethical theories attempt to offer answers to the question, how ought I live? They attempt to inform actions and judgements

(Singer, 1993). The theories generally fit into two main groups; those that consider ethical actions as rules, deontological theories, and those that consider the consequences of actions, teleological theories:

“ethicists who are in the ‘rules’ camp believe good actions result from following the correct rules of behaviour, which generally are thought to be universal and applicable to all... ethicists who focus on consequences, in contrast believe general rules are not specific enough to guide action and feel instead that we must look to the consequences of our actions” (Laudon, 1995).

These can further be defined by considering Table 1 or by considering the following classification adapted from Mason, *et al*, (1995):

Rules, *prima facie*: duties, rights, privileges and responsibilities

Consequences: egoism, [group] consequentialism and utilitarianism

Table 1 Ethical Theory Comparison (from Wood-Harper, *et al*, 1996)

Label	Beneficiary	Objective	Good
Deontological	Not considered	Follow the rules	Following the rules
Egoist, Individual Consequentialist	Individual	Maximise good for the individual	Happiness, well-being, fame, richness
Group Consequentialist	Group (social/organisational)	Maximise good for the group	Survival, autonomy, ascendancy
Utilitarian	Society as a whole	Maximise the good for human race	Life, liberty, standard of living

While these ethical theories do not form a complete or universal typology, they enable a deeper search of the ethics people hold within a given situation. They form a debate, within which other views may become known. This process should be undertaken within a process of learning, where understanding, not prescription, is the goal. In a sense, the theories are secondary, exposing the issues to allow for a greater understanding (Wood-Harper, *et al*, 1999).

1.3.4 Ethical Analysis Framework Summary

The elements described above, when used with a learning-based rationale, provide a coherent approach that can be used to consider the ethical nature of a given messy situation. Stakeholder analysis and SSM, working together, expose the situation and allow for a deeper understanding of the positions of individuals or interested parties therein. Rich pictures, root definitions, and other thinking tools within SSM, in conjunction with stakeholder analysis, express the situation in a manner that allows further exploration and understanding. Ethical theories, especially normative ethical theories, used within this structure can then be utilised to discover prevalent ethical

perspectives and quandary. The various elements of the framework work together to explore and express the situation, with an emphasis on learning and understanding (Wood-Harper, *et al*, 1999).

1.4 The Area of Concern – Defined

The above discussion has outlined the need to explore the introduction of ICT into physical communities and has argued for an ethical basis for this exploration. Further, an ethical stance and framework have been introduced to assist in the exploration. This section briefly defines the area of concern, providing succinct definitions for the remaining chapters of this thesis.

1.4.1 Statement of the Area of Concern

As stated at the beginning of this chapter, the area of concern is the introduction of information and communications technology (ICT) into the physical community, from an ethical viewpoint or stance. The research issue is further focused by framing it within a research theme, as advocated by Checkland (1991). This is defined as the exploration of the introduction of information and communication technology into the physical community, using a defined conceptual framework, to structure results and findings. The fieldwork part of the study will be conducted using an ethical analysis framework, as previously defined.

1.4.2 Justification

It is the potential harm resulting from shifting burdens and responsibility, the fact such an introduction of ICT will change the day-to-day lives of all those involved, and the focus of prior research on the virtual rather than the physical community (Kling, 1998), that justifies the importance of this research. The research is also important to the discipline of IS research by considering the role of ethical analysis within it.

1.4.3 Aims and Objectives

- To explore the introduction of information and communications technology into physical communities from an ethical viewpoint, using a defined conceptual framework
- To investigate ethical theories and analysis within the information systems discipline, to explore the framework for ethical analysis, and to expand the breadth and depth of IS ethical discourse beyond the development and delivery of technical artefacts
- To investigate the role of ICT in information societal or community regeneration initiatives

1.4.4 Conceptual Framework

A conceptual framework will be developed and presented in the next chapter, which will then form the basis for the remainder of the thesis. This framework covers the main themes surrounding this study, namely, the information society and ethical theories, and is complemented by the ethical analysis framework devised by Wood-Harper, *et al*, (1996) and revised by Wood-Harper (1999) for use within the fieldwork part of the study. This framework is not only based upon previous legitimate work but also combines ideas from well-researched elements and theories. The overall conceptual framework will allow for a further exploration of the introduction of ICT into physical communities and the ethical analysis framework.

1.4.5 Limitations

Statements made earlier in this chapter have highlighted the need to step away from utopian or technically-led ideas concerning the introduction of ICT into physical communities. A period of exploration is therefore appropriate to properly consider the role of ICT within physical communities. Therefore, this research study was

limited to an exploration of the area of concern. As such, the study will not seek to define theories or provide definitive answers to the questions that are posed above. There are also limitations due to the experience of the researcher and the level of access provided, which limit the choice of research method and are further explained in Chapter 3 of this thesis.

1.5 *The Structure of the Thesis*

Chapter 2 of this thesis will discuss the concepts of information technology and the physical community as information societal issues and ideas, and this will be complemented by discussions concerning ethical theory and ideas. From this, a conceptual framework will be developed and presented with reference to the prior work. Firstly, relevant prior work from the domain of information technology and the community is presented, which includes work relating to virtual communities, showing that there is a concentration of work that considers the virtual community at the expense of ‘real’ physical communities. The next main section of the chapter discusses ethical theories and practice from both a general ethics perspective and one that directly relates to the information systems discipline. During this discussion, models and tables are used to show commonalities between the theories and ideas to aid in the explanation of a maze-like domain. Some operational ideas are introduced, making them explicit. Following this, the conceptual framework is developed and presented by taking a second pass over the literature and discourse to create a coherent structure.

The research approach to expose the area of concern to the researcher, through the conceptual and ethical analysis frameworks, is detailed within Chapter 3. The chapter

begins with a summary of research methods and research practice within the IS discipline. From this and a theoretical discussion, an approach is chosen and detailed. The mechanics of the methodology are then expressed, detailing how the methodology, conceptual and ethical analysis framework are applied to the situation. This constitutes the research protocol and includes the monitoring and control aspects of the research approach.

Chapter 4 will present the fieldwork part of the study, which represents the exploration of the area of concern, using the conceptual framework of ideas and the ethical analysis framework, as outlined in this chapter and detailed in Chapter 2. The chapter begins by detailing how the research subject was found and how an entrance or access was gained. After this, the chapter is split into two main sections. The first section details the events, meetings and general exploration of the research subject, considering in particular the nature of the introduction of ICT into the physical community. The second section details the use of the ethical analysis framework, where situations emerged from the general course of research. A chapter summary discusses the findings from the two sections and considers the importance of interplay between them.

Chapter 5 considers the findings or results from the fieldwork, as detailed in Chapter 4, and presents these in relation to the conceptual framework. This chapter builds upon the findings from the fieldwork after a process of reflection, returning to the framework of ideas, where further analysis and understanding is sought. The chapter also provides analysis of the research process and discusses how the research method was applied and how the research process evolved over time.

The final chapter, Chapter 6 of this thesis, following Wood-Harper (1989), summarises the research study. Building from Chapter 5, it presents succinct findings, lessons and recommendations. The chapter draws upon these, the conceptual framework and findings from the fieldwork, to formulate conclusions.

Chapter 2

Conceptual Framework

2.1 Introduction

The previous chapter of this thesis outlined an area of concern, the introduction of ICT into physical communities, and began a discussion of the issues that permeate such an introduction. It was argued that an explorative approach should be adopted and that an ethical viewpoint would be valid and fruitful for such an investigation. This chapter reviews relevant literature and discourse pertaining to these areas and also considers some operational ideas as a basis for creating a conceptual framework. The resultant framework constitutes a strong foundation for the remaining chapters of this thesis and allows for lessons to be learned from a rigorous standpoint. As noted above, the chapter begins by laying forward relevant literature and discourse pertaining to the strands developed in the previous chapter. After setting out this material the conceptual framework is created. This begins by exploring the need and value of conceptual frameworks within research and then, with reference to the literature and discourse, the conceptual framework is presented, as a second pass over the literature pulling together salient points to create a stronger, more relevant framework. The framework is first presented in model or overview form and then each element within the framework is further examined and its relevance to the research study explained.

The remaining sections of this chapter are organised as follows. Firstly, literature pertaining to the information society or the use of information technology within society is presented. This is followed by a section devoted to the ideas and theories

surrounding the subject of ethics. The next section clarifies two important elements within the conceptual framework of this study; as outlined in the previous chapter, these are Soft Systems Methodology and stakeholder analysis. After this material has been laid out the conceptual framework proper is developed. The chapter concludes with a short summary.

2.2 *Information Society*

Garfield (in Duff, 2002) perhaps captures the state of flux that reflects the current state of the information society. He first considers an information-conscious society, where individuals realise the importance and use of information but cannot gain adequate access. He then suggests that the information society proper would be where access to relevant information is readily available. The researcher considers the current state to be somewhere between the two ideas above, but it should also be noted that the situation is inherently more complex. For instance, different sections of society may be at different stages toward the information society, and some disadvantaged groups within society may not be at the first, information-conscious stage.

A technological undercurrent is often present when the idea of an information society is being discussed. Hoare (1998) considers this narrow approach to the understanding of what might constitute the information society and draws on a librarian science perspective to widen the scope of the subject. This begins by taking a historical account of the use of information, bypassing the Stone Age and the printing press invention but starting within the seventeenth century with the inception of the Royal Society for Improving Natural Knowledge. This starting point is seen as significant

as the society began to offer not only face-to-face communication but also the publication of knowledge, in this case scientific, so it could reach a wider audience.

2.2.1 Virtual Community and Society

Much of the work concerning the information society “tend[s] to emphasize the virtual at the expense of the more commonplace, physically situated activities” (Kling, 1998). The discussions concerning virtual society and community are of relevance to the research study since they provide concepts that can be used to explore the research area and evidence of a bias toward the virtual within published research.

In discussions concerning virtual or electronic communities, “community is rarely defined... [or] tends to be used either in a simplistic or unproblematic way.” Several notions of community have been applied to the area of virtual communities, sometimes in a confusing manner (Komito, 1998). These include moral, normative, proximate and fluid or foraging communities, whereas in discussions concerning the web the notion of community tends to differ. Here, the notion of community transcends geography and extends beyond the nation state. In a sense the web leads to the creation of communities of interest, such as those based upon ethnic group or occupation, that may be global in nature. Geyer (1996) suggests that virtual (web-based) communities are complex entities that require fast communication and dispersed co-operation. He suggests virtual communities are separated from other frivolous uses of the Internet by a strong focus on a common, often complex, goal and by a consensus toward achieving the goal by all those involved. Such strong communities, based on access and privileges inevitably lead to isolation of other communities, such as the poor or ill educated (disadvantaged groups).

Virtual communities created through ICT tend to be more ephemeral in nature; they lack the robustness of classical/physical communities that can engender a sense of common ideals and beliefs. People tend not to invest in these particular communities but instead move to and from overlapping communities, creating fluid communities (Falk, 1998). In order to create more robust online (or physically-based) communities the technical aspects of ICT need to be focused on the purpose of the community being served.

As part of an introduction to a group of essays on 'cybersociety', Jones (1995:1) presents a vision of the emergence of 'cyber communities' as a consequence of technological development, notably computer mediated communication, or CMC. However, the work concentrates on the cyber (virtual) communities or societies that are said to be created through the use of CMC. This is most evident in the discussion on pseudocommunity, when Jones states that "a pseudocommunity is one in which impersonal associations constitute simulated personalized communication" (Jones, 1995:2). At no point is the effect of such technology on existing communities or society examined. While some of the issues presented, such as the problems with personal identity and the blurring of reality, are important, (Aycock & Buchignani, 1995) perhaps from a long-term perspective, they do not address the very real and immediate issues that such technologies bring to bear on existing communities and society.

The idea of virtual worlds or realities is often associated with either multiple or anonymous identities, indeed it has been referred to as a game of masks. Furnell and Warren (1997) consider this lack of concrete identities to be a factor in the abuse of

computer and communication systems. They postulate that anonymous activity within a virtual space or cyberspace leads to a position beyond reality where people can act with impunity. A popular piece of work (Slouka, 1995) also considers the future uses of information and communications technology as an “assault on reality” and provides a prediction of our virtual lives as slaves to machinery. The same ideas that lead to these conclusions can also lead to ideas of freedom, where the technology provides individuals with the opportunity to move about different (virtual) spaces and explore new ideas that may not be available to them within the physical world.

Virtual communities and society research also tend to use the growth rate of the enabling technologies, most notably the internet, to add weight to the claims about our virtual future, often in a dramatic fashion. This dramatic growth in communication technologies has also led researchers to consider the sociological effects, such as alienation. Although conceding that more research is required in this area, Geyer (1996) has put forward some useful questions regarding this issue, thus: are virtual communities more or less alienating than normal (physical) communities? Are they advantageous for some, those who dislike face-to-face communication, and disadvantageous for others? While the growth rate is certainly worth noting it does not follow that our future will necessarily be virtual in nature; it is not yet clear whether this is necessarily all bad, and again the effect of this dramatic growth rate on existing communities and society could have been explored.

It should also be noted that although there is a growth in the number of new users of information and communications technology, there is also a growth in those who have used such innovations in the past but have now ceased. Kingsley and Anderson

(1998) have noted survey research that shows the growth rate in those ceasing to use the internet as growing faster than the growth rate of new users, something they regard as a discontinuance of an innovation. More importantly they state that this discontinuance is not related to either a lack of technical skills, access, or a lack of relevant/useful information but rather a lack of enthusiasm for the technology and the services it offers.

2.2.2 Public Access to Information and Communications Technology

Public access to information and communications technology is central to the research subject, which concerns the introduction of such technologies into physical communities via public access. In looking toward the “Next-Generation Internet”, Kling (1999) considers the role of ‘big pipe’ (high bandwidth) technologies in application areas such as healthcare, education, research and entertainment, and questions the beneficiaries of such innovations and the diverse aspects of public access, including barriers, some of which, together with others, are discussed below.

Many scenarios where “ordinary people” interact with ICT assume that access to information and services is non-problematic from a technical point of view. However, today’s hardware and software technologies are very complex and their interaction can cause difficult problems for non-technically-minded people. Indeed, it is best to see ICT as a sociotechnical package that includes people, technologies, techniques and information (Kling, 1999; Falk, 1998). Successful implementation of social networks combines access, training and ongoing support (Law and Keltner, 1995) Such a package may allow for social access to ICT where knowledge, economic resources and technical skills are available, or, better still, integrated into the technical architecture (Kling, 1999).

The notion of 'access' in terms of providing public access to ICT has many different meanings. The most common understanding is that 'access' refers to the physical equipment and infrastructure used to enable electronic communication. However, an individual's, group's, or organisation's ability to use the available equipment to retrieve information or communicate is perhaps a more important view of access. Kingsley and Anderson (1998), quoting Viswanath, contend that "both education and motivation to acquire information affected knowledge gaps." From the above passages, successful implementation of social networks combines physical access, motivation, education, training and support. All of these ideas combined provide a more elaborate meaning behind the term, 'access'. It should also be noted that 'access' does not necessarily relate to gaining access to material, for it could, for instance, refer to an individual, group or organisation's ability to generate and place content within an ICT network. This sort of access provides people with a voice within the information and communications network (Keenan and Trotter, 1999).

Disadvantaged groups such as low income families tend not to participate in the use of ICT. The use of civic networks may provide access for such groups. Civic networks "use network technology [ICT] to serve public interests and increase public access to information" for the general community or targeted disadvantaged groups (Law and Keltner, 1995; Keenan and Trotter, 1999). Civic networks offer a number of social benefits through access to information and communication technology. People can become more connected and participate in their local community. Law & Keltner (1995) contend that civic networks lead to social benefits including increased communication which can assist isolated people and increase their access to relevant

information, often locally based. In order to achieve social benefits from civic networks, communication or social interaction needs to be nurtured. Generally this cannot be achieved via a community website alone, although even with regard to community networks some researchers and practitioners still have an internet bias. Either an email network or bulletin board technologies needs to be utilised to encourage community interaction (Buie, 2000). The social benefits (especially in terms of disadvantaged groups) and combating of possible social division may be part justification for government involvement in the provision of ICT networks (Keenan and Trotter, 1999).

Community-based groups providing public access to ICT often do so by developing partnerships with local businesses and other agencies within the community. This not only helps them fund the initiative, for instance by sponsorship, but also broadens both the reach within the community and the range of services that can be offered. Keenan and Trotter (1999) suggest that the term 'freenet' (free access to the internet) is inadequate to describe groups or community (social) networks providing community access. For instance, they cite their role in educating the public in the use of the technology, and the creation of links throughout the community (Keenan and Trotter, 1999).

Considering how governments dealt with access to other telecommunications innovations is potentially fruitful for the current/future telecommunications technologies. For instance, it has been noted that many governments perceived telecommunications to be vital for either security or sociological reasons.

Governments have assured adequate access to telephony by using a variety of methods including taking public ownership or regularity approaches.

A Sample of ICT Projects

The following sample projects disclose ideas useful for a further exploration of the introduction of ICT into physical communities. Microsoft, as an organisation, provided free technology and access to the internet for a chosen street in Islington, London. The project, known as MSNStreet, was to investigate the role and effects of the Internet on real or physical communities. Of the households presented with the offer, 23 accepted and became part of the ‘experiment’; a total of 60 people were involved. In general, it has been reported that the participants became enthusiastic about the uses of the internet, with examples of uses including looking at stock quotes and booking holidays. However, it is the reported increase in communication and contact with other participants and neighbours that is potentially more important, through email and bulletin boards. This contact or interaction allowed the distribution of information between the participants on a social level. Examples include plumbing, electrical contractors and babysitters. This high level of social interaction also led to discussions concerning street lighting after burglaries, the publication of a local electronic newspaper and the organisation of a street party (Giussani, 1998).

Within the European Community a telematics project known as Infocities is being developed to cover a diverse number of sectors. These include education, culture, healthcare and electronic commerce. The project is to “deal with the future needs of the community” (Storm, *et al*, 1998), by making use of improving telecommunications and other advances in enabling technology. Manchester is one

city that is participating in the project, partly through economic regeneration funding. While considering the business opportunities for telematics and electronic commerce within Manchester, Storm, *et al*, (1998) provide interesting insights into the potential community use of ICT. Indeed they cite the relatively low SME take-up of telematic services compared to the high citizen involvement. During the study citizens were more involved and used the opportunity to build a 'city infobase'. Creating a sense of community, by providing chat rooms and forums, was considered important to achieving electronic success and is backed by surveys that suggest communication is one of the primary uses of the internet. This suggests that the community cannot be neglected when considering electronic commerce initiatives within cities and also shows the importance of a sense of community.

Southern (2001) provides a holistic view of the introduction of ICT to the North East region of the UK through research that considers a number of regeneration projects throughout the region. What follows is a summary of those projects, teasing out important aspects valid for ICT introduction into physical communities:

- Northern informatics – this project, the closest to a region wide project, brought together people from local authorities, education and the private sector in an attempt to engender competitive advantage through the use of ICT. The prevention of social exclusion, the information 'have-nots', was a major concern and the use of locally-based electronic village halls was to be the mechanism to combat this. The idea seems to be to provide education, training and support throughout the region, while simultaneously encouraging the use and knowledge of information technology to aid economic

regeneration. It is worth noting that the notion of social exclusion is seen as a shift in the politics of regeneration toward combating poverty. Also worthy of note is the difficulty in finding a place within the government or political apparatus for the project or projects.

- **Sunderland Telematics** – Much is familiar with this project, for instance, Single Regeneration Budget funding and wide-ranging partnerships. However, what is strikingly different about this project is the idea of a physical presence for information technology, the Doxford International Business Park. Such a site offers facilities for businesses to site their information processing functions within purpose built premises. Training is also a part of the package, enabled through the concentration of information-based businesses. One aspect from this part of the research worthy of note is the concentration on one information processing activity, that of call centre operation. It is questionable whether the adoption and concentration of call centres, given the work conditions, pay and the lack of opportunities they offer, is a beneficial use of ICT from a social perspective. An informed community may not be created via an increase in mundane information processing activities.
- **County Durham On-Line** – This project, while focused from the local TEC again, involved a wide-ranging partnership through education and the local authority expanding out to voluntary groups and local small firms. The project utilised a resourced and cohesive unit to implement the goals of the group. However, because the project was TEC-based, it lacked government involvement and the necessary links to regional regeneration strategies, and mainly as a consequence of this the project faltered. This may indicate that

sustainable use of ICT for regeneration requires a broader outlook and government funding.

- Teeside Informatics Partnerships – The history of development within Teeside again shows the problems associated with a piecemeal approach, or a disregard for regional strategy, to ICT regeneration. Latterly, a strategy was developed to encompass three areas; local business, education and training, and community access. However, this has not prevented groups wishing to utilise ICT within the region from developing outside of the strategy, duplicating work and weakening the co-ordinated approach. One lesson gained from this project was the realisation that focusing ICT regeneration on business alone is not sufficient; raising awareness and access throughout the community is needed, together with education, training and a general concern for social development.

Libraries and ICT

In recent years there has been more and more research concerning the delivery of technology-based information services by libraries, stemming from the librarian research community. Given the potentially central role that libraries will play within physical communities regarding information provision, the inclusion of work from this area is vital to this research study. The public library is seen as a relevant outlet for community information provision. In the past, libraries have been unwilling or at least unenthusiastic about providing information-based advice and guidance, due to the burden of providing accurate and pertinent information and the associated liabilities this entails. Recently there has been a change in this view, not least to counter social exclusion by providing daily problem-solving services to the socially

and economically disadvantaged. An example of such an approach is the Linwood Information Centre, which had the “specific aim of providing a single reference point for information through staff with a range of expertise including librarianship, social work, and welfare rights...”(Kendall and Wilkinson, 1998) While recognising that public libraries offer a great deal and have wide appeal, it has been noted that a comprehensive service reaching the majority of people within a specific location requires partnerships and multiple access points. It has also been noted that multiple access points and partnerships can lead to duplication of services and wasted resources (Kendall and Wilkinson, 1998).

Public libraries are beginning to see the use of information technology as a means of delivering community information. While this generally has an internet bias, there are some venerable aims such as providing information concerning life changing events, the acquisition of information retrieval and communication skills, all with a focus toward lifelong learning. Perhaps even more worthy is the idea of community information networks, which provide a service for information providers and participation for information users, and aim to improve information flow throughout the community (Kendall and Wilkinson, 1998). Researching from within South Africa, Mostert (1999) defines three different approaches to the delivery of information. The approaches were partly developed from a background of disparate service provision for different racial groups and political or democratic movements for the disadvantaged. They are briefly examined below, followed by a table depicting the following important aspects and differences:

- Public libraries are generally based on a western library model with local government funding; they tend to offer print-based material, mainly for leisure

purposes. Services are mainly delivered by appointed staff to clients visiting the library. There is also a lack of involvement with other organisations throughout the communities they serve.

- Community libraries differ in that they are generally pro-active with regard to community participation and promote active communication between librarians and clients. Alternative information materials are available and delivery is based upon equal access to all. Community libraries have involvement in the day-to-day lives of their community members, empowering the disadvantaged and improving their quality of life. This is achieved by community information services and through the use of a wide variety of delivery methods, including personal communication.
- Resource centres arose as a result of neglect of certain disadvantaged groups and are normally created by community organisations such as churches. They operate at the very heart of the community with major contributions toward the inception and running of the centre from members of the community. Membership can either be the whole community or the select group that the centre was created for. Materials and resources are available in a wide variety of formats and include resources to aid in the creation of materials for use by the centre's members. The main focus of all materials is relevance and currency to the community or specific group being served.

Components	Public Library	Community Library	Resource Centre
Aims	To provide informal education and cultural enlightenment. Disseminate information Recreation	To motivate and empower To enable disadvantaged communities to participate in activities To provide information to help with fulfilment of life aspirations	To empower the community To promote self-reliance
Service attitudes	Passive	Pro-active	Pro-active
Services	Cultural and leisure services Information services Audio-visual services Community information services	Structured services to meet the needs of people Services intended to help people with daily problem solving Active in providing equal access to information resources	Structured services to meet the needs of people Services intended to empower the community Active in providing equal access to information resources Provide access to equipment and other resources to allow easy creation and access to information

After public libraries, the main group within the UK with direct involvement in providing public access to information and communication technologies is local authorities. This area is less researched than research regarding public libraries and ICT but is, none the less, as important. Mirroring business change, local authorities are downsizing their provision of services. They are becoming less the sole provider of community services and more the managers and facilitators of diverse groups, all looking to provide services throughout the community. Through involvement with

the European Community, local authorities have been or are undertaking ICT-based initiatives; an aim of the EU programme is to provide effective and efficient public services orientated around the community members through the use of information. From a local authority perspective, being a part of the programme provides much needed capital in order to implement such initiatives (Horrocks and Bellamy, 1997).

The ability to provide information to dispersed groups throughout the community is seen as a major use of telematics or ICT within local authorities, thereby bypassing bureaucracy and departmental divisions, and providing useful information to the point of delivery directly to community members. Horrocks and Bellamy (1997) suggest a number of innovations and best practice ideas with regard to the provision of information within communities, thus (adapted):

- Innovations
 - Enrich information resources to support community-orientated managers, public service delivery and democratic processes
 - Provide more flexible and convenient access to information and public services
 - Move towards more holistic client-oriented provision, less constrained by departmental or functional boundaries
 - Develop more flexible, cost-efficient and speedier ways to exchange information with other agencies
 - Develop more flexible forms of service delivery which are closer to and more responsive to the public, including the development of decentralized or community outlets

- Provide more convenient and accessible facilities for citizens to communicate with elected politicians, public officials, community groups and other citizens
- Best Practice
 - Have tangible and demonstrable benefits in adding value
 - Further the principles of equity of access (to address the issue of information 'haves' and 'have nots')
 - Have meaning for citizens
 - Stimulate co-operation between different agencies of governance at national and local level in exchange and sharing of information

From these ideas, Horrocks and Bellamy (ibid) conceive a number of significant issues, including the need to foster partnerships across community governance, especially through sharing and exchanging information, the changes in community governance, the reliance on partnerships and the spread of service provision all require new roles, relationships and skills to be developed throughout the community. The need to ensure equitable and convenient access to all citizens requires a community, or at least locally-based, infrastructure capable of the delivery of multimedia services. Telecommunications organisations may provide solutions to this but their involvement must be carefully implemented to ensure disadvantaged groups and areas achieve the same core access as the more affluent areas, and that provision is not solely market-driven. Finally, regulation of community information services is required to ensure data privacy and the close control of surveillance, including digital presence/footprints, the recording of an individual's presence and history within a network..

The discussions above have considered how ICT can be exposed to the public through community-based projects, libraries and other outlets. Cockburn, *et al*, (2001) consider the use of ICT from an educational perspective and perhaps more importantly consider different types of community structures in reflecting on the role of ICT within learning. Community is used in this instance as a community of interests rather than a physical location. The focus of the research is again a European-driven regeneration project, this time with SME involvement. The work distinguishes between social and sociable learning. Social learning is characterised as an individual using language to gain information from others or technology directly for individual gains. Sociable learning, however, focuses on community-based learning where high levels of interaction are required to achieve self-improvement, but with a basis of community gain. “The learning is ‘sociable’ since it has emerged from the human interactions and relationships within a communal activity system.” (Cockburn, *et al*, *ibid*) It seems easier to enhance individual or social learning through ICT; it is easier to provide information than to encourage interaction and relationships with ICT. Education and lifelong learning are potentially a major use of ICT within physical communities and for developing communities of interest, but there are different paradigms or approaches to the delivery of such services to the public.

The introduction of ICT into physical communities often has both a developmental and economic regeneration focus. The following passages discuss aspects of ICT within development initiatives and economic regeneration. Building the infrastructure is a necessary step with regard to ICT and regeneration, but without access,

availability and capabilities to use the information itself, the infrastructure is redundant. Incentives are needed to persuade individuals, groups and whole organisations to use the technology effectively. The focus should be on socioeconomic regeneration and not on, for instance, the number of terminals or connected users, “but also in terms of its accessibility and contribution to social progress” (Madon 2000). The potential conflict between measuring the actual social impact of the regeneration project and the need to measure in a quantifiable manner to satisfy funding regimes has also been noted (Southern, 2001).

The role of ICT in regeneration and development initiatives bridges many areas, including those identified by Madon (2000). While these were originally based upon the internet alone, it is reasonable to consider them in terms of the introduction of ICT into physical communities as follows:

- **Economic Productivity** – it is widely acknowledged that the internet offers a chance to market products and services to a potentially wider consumer base. Broadening the idea to ICT, one can think not only in terms of a wider consumer base but also the provision of information services. Both of these can be used to increase economic productivity. One important prerequisite to the successful adoption use of information technology seems to be business managerial flexibility and the ability to restructure and adapt to working with information
- **Health** – promoting effective health information is a potentially useful implementation of the internet or other such information and communications technologies. Health workers can gain access to the latest best practice and share knowledge, which is vitally important in an ever changing environment

- Education – while it is self-apparent that education is a key area for ICT regeneration, there are different ways of approaching it. Madon (2000) considers the networking of schools via the internet to be important and considers the benefits and difficulties with distance learning. However, what he does not consider is education dealing with the use of information. In a sense he sees the technology as a way of delivering education or aiding in its delivery and not its use to acquire and represent information
- Poverty alleviation and empowerment – information technology can be used by local or regional officials to help monitor social conditions and position resources to alleviate social ills. People within communities can be given the opportunity to learn new skills and acquire relevant information, and in so doing, they may be in a better position to take advantage of new opportunities

Technology has often been portrayed as a tool for economic regeneration.; for instance, the late Lord Wilson's famous 'white heat of technology'. Over the past few years ICT has become the latest 'new' technological idea to be portrayed in such a way. However, some see this as rhetoric and question the validity of taking a deterministic stance with regard to the emphasis placed on the role of technology in economic regeneration.

A more detailed examination of the regeneration impact of technology is provided by Southern (2001). For example, he draws on ideas concerning the pre-industrial age to show that the relationship between technology and the economy has not emerged with the current crop of technologies based on information and communication. Following this, he recognises the complexities involved in the relationship, be they political,

based upon cyclical economics, or the fact that other conditions, such as labour flexibility, are required for the relationship to work. While acknowledging this complexity and the social and economic dangers of the use of ICT for regeneration, Southern (2001) offers the following telling insight:

“It would therefore seem unreasonable to suggest that technology does not matter to economic development. Clearly it does and it is not necessarily technologically or economically deterministic to say so. Yet it is also feasible to ask whether technology automatically produces economic growth and regeneration and when it does, are communities any better off than before...”

While based on national economic development, an explanation given by Madon (2000) of the trends in development thinking offers insight into economic regeneration. The explanation begins by suggesting that the modernist approach was the earliest theory of development, based upon the Western idea of cities as engines of growth via a concentration of scientific and technical institutions and information services. However, it is the localists of neo-populists paradigm that is perhaps the most interesting, or rather what has come from the ideas is perhaps most interesting. “These experiences have led to a redefinition of the goals of development with much greater emphasis on non-economic aspects” (Madon, 2000). These ideas echo the passages above by suggesting that social welfare is a major part of development initiatives. Also echoing the above statements is the realisation that while technology has an impact and diffusion of the technology is important, “equitable forms of human

development do not depend on economic growth or technology alone” (Madon, 2000).

Following from this, it is reasonable to conclude that ICT is not sufficient for regeneration. “ICT led regeneration is a long drawn out process and numbers of people on training schemes or web pages to help marketplaces are peripheral to the restructuring economy” (Southern, 2001).

There is some debate surrounding the level of strategic development required for regeneration. While local communities or particular initiatives/developments is the starting point, some believe that regeneration requires partnerships beyond local communities and must be part of regional development programmes, while others contend that national or even international co-operation is required. Added to this debate is the importance of a local context to technology use and the generation of local information or knowledge (Southern 2001, Madon 2000).

2.3 Ethical Theories

2.3.1 Normative Ethics and Ethical Theory

This section begins by looking at normative ethical theories. These attempt to offer answers to the question, ‘how ought I live?’ They attempt to inform actions and judgements (Singer, 1993). Normative ethical theories generally fit into two main groups; those that consider ethical actions as rules, the deontological theories, and those that consider the consequences of actions, teleological theories (Laudon, 1995).

Deontology - Morality Governed by Rules: deontology is the ethical theory of rules, which stems from the Greek word ‘deon’, meaning duty. Deontologists believe

that our pursuit of our own interests or the general good are not sufficient reasons for taking action and further believe that there are acts which are wrong and should be avoided. “Deontological ethics refers to moral obligations or rules that have the force of commands and thereby dictate an agent’s behaviour” (Laudon, 1995).

Deontological ethics include responsibilities, duties, privileges and rights, some of which are binding ‘at first sight’. We have a *prima facie* duty to do something because it matters morally at first sight (Dancy, 1993; Mason, *et al*, 1995). Of the four, the idea of *prima facie* rights is the most emotive. “Rights specify acts that an agent is inherently and universally entitled to take,” and further, “an act taken by an agent who acts within his or her rights is generally considered to be ethical” (Mason, *et al*, 1995).

Teleological Ethics – Consequences: teleological ethical theories centre on the consequences of acts rather than the acts themselves. They encourage us to consider the results or consequences of our actions (Laudon, 1995). Therefore, moral laws can be broken if the desired moral result is achieved. An important element of teleological theory or consequentialism is the target audience, that can be individual, group or societal (Utilitarianism, a large branch of ethical theory, is considered in more depth in section 3.1.3) in nature, who is the beneficiary of the good. (Wood-Harper, *et al*, 1996)

Individual Consequentialist, Egoism: egoists believe that we act or should act out of our own selfish interests, that our actions may be at the cost of others. This belief seems to be contrary to the notion of morality; however, it does form a strong normative theory that cannot be discounted. Among the versions of egoist theory are

psychological egoism, which contends that the way in which all of us act is governed by the pursuit of our own best interests to maximise our own good, and the theory of egoism and the common good, advocates of which believe that the common good can only arise out of the pursuit of selfish interests Baier (1991) characterises the theory of egoism and the common good as asserting that “under certain conditions the promotion of one’s own good is the best means of attaining the legitimate aim of morality, namely, the common good.” Some would contend that each of the above versions of egoism have major flaws that call into question the idea of egoism as an ethical theory, but the fact that egoism is a theory that guides actions requires us to consider it (Baier, 1991).

Group Consequentialist: for this theory the focus of who is the beneficiary of the good moves from the individual to all members of a specific group. This group may be a professional body, members of an organisation or workforce, a political body, a sports club, or, in the context of this piece of research, a member of an ethnic, economic or social group.

Utilitarian Ethic: in utilitarian theory, ‘the good’ is to be evaluated for the whole of society, the entire human race, and possibly beyond (Singer, 1993). Any action must lead to benefits throughout society and should ideally reach everyone. This concept, while being idealistically desirable, is often difficult to achieve in practice. While the utilitarian ethic is difficult to implement, its use in debate can provide useful insights (Wood-Harper, *et al*, 1999).

Quinton (1989) contends that the basic principles of utilitarian ethical theory are present in Greek ethical thought, but there is a bias toward 'how I should live?', with regard to others taking second place. Greek ethics tends to pursue self-realisation of the individual rather than the consideration of others:

- In hedonistic terms, the Greeks considered there to be a difference between lower and higher pleasures. Lower pleasures were bodily or self-gratifying in nature while higher pleasures were concerned with bettering oneself, for example, through knowledge. The Cynics and Stoics considered the sum of pleasures, a utilitarian approach, but rather than considering the general happiness they believed in the suppression of desire and pleasure.
- Plato took this tendency to consider self-realisation further by denying pleasure to prepare the mind for rational contemplation and wisdom, which he considered to be the most highly elevated virtues.

With the emergence of Christianity, a new form of utilitarian theory was created, ascetical and non-hedonistic in nature. Men were to act to deny others pleasure, leading them to salvation from earthly pleasures. The validity of moral principles was solely based on the commands of God. However, Aquinas in part believed that some 'non-religious' moral objects could be discoverable by natural reason. In other words, moral knowledge from this time, the late Middle Ages, was rationalistic; either God made moral knowledge available through scripture or internally through man's innate capacity to self-evident truths.

Classical utilitarian theory emerged from this background as a theory based upon a naturalistic and secular doctrine. Morality was seen as an institution to harmonise the conduct and satisfaction of humanity through empirical thought, which was developed from the secular stream of naturalistic philosophies. Hobbes, who was really an egoist at heart, considered how people could live together while acting for themselves. He concluded that in order to achieve self-preservation there was a need to consider others, possibly through universally accepted rules.

Cumberland, using the same underlying principle of morality, that required explanation rather than justification by divine commands alone, presented a polemical argument stating that man's motivation need not be selfish but could stem from benevolence.

“the aggregate or sum of all those good things which either we can contribute toward, or are necessary to, the happiness of all rational beings considered as collected into one body.... promoting the common good.... to the good of every part, in which our own happiness, as that of a part, is contained” (Cumberland, in Quinton, 1989).

“the greatest happiness of the greatest number, morality as an exercise in reason” (Hutcheson, in Quinton, 1989).

“an attempt to introduce the experimental method of reasoning into moral subjects” (Hume, in Quinton 1989).

Hume, though similar to Hobbes, was not truly a utilitarian, but conceived a theory that can be portrayed as utilitarian. He suggested, “Morals have an influence on the affections... [They] excite passions and produce or present actions.” Hume thought moral judgements were practical in nature; they were not necessary truths demonstrable by reason nor descriptions of external matters of fact. Instead, moral judgements were inward in nature, centred on emotion, and consideration for others was through emotional concern or appeal.

The standard or classical form of utilitarian theory generally combines two principles:

- It is consequentialist in nature; the rightness or wrongness of action is determined by the goodness or badness that results
- It views ‘the good’ in hedonistic terms; the only thing that is good is pleasure, the only bad thing is pain. This is often taken for granted, but the theory rests on the fact that that happiness is a sum of pleasures, which is difficult to judge

There are a number of sub-theories, such as the ideal utilitarian theory (Quinton, 1989), which considers the intrinsic value not of pleasure but of factors such as virtue, knowledge, beauty and the greatest happiness principle. The greatest happiness principle determines the rightness of an action by its contribution to the happiness of everyone affected by it.

Bentham and John Stuart Mill offered a fair account of utilitarian theory (Quinton, 1989). Bentham also considered the problem of judging between obligatory and

permissible actions, actions that were wrong not to do or ought to be done (obligatory) and actions that were not wrong to do (permissible). From a utilitarian point of view, Bentham concluded that any action that detracts from the general happiness is wrong.

However, this leads to a number of difficult problems that the majority of utilitarian ethical theories face. Given that at any time actors will have to choose a particular course of action, the following problems will be faced:

- What if all actions detract from the general happiness? Applying Bentham's idea, all actions would then be wrong. Moore presented a way out of this dilemma. He suggested that one should choose the action that contributes most or detracts least from the general happiness. However, this compels an action of some kind
- What happens if we consider inaction? If doing nothing does not detract from the general happiness, is this never wrong?

According to Quinton (1989), utilitarian ethics seemed to be a lame duck or an intellectual relic in modern ethical theory. Principally due to the fatal blow delivered by G.E. Moore's *Principia Ethica*, on the grounds that ethical or moral judgements and values cannot be based upon, or are concerned with nature. Quinton further postulates that utilitarian ethics and its proponents lead to its own downfall by basing the theory or theories on intuition. Further to this, he states that two of its most vehement protagonists also led to weaknesses in the theory:

- Firstly, Sedgewick based his utilitarian theory on the principle that general happiness is the ultimate moral end, with no watertight way of showing this
- Mills, on the other hand, based the theory on the differences between qualities of pleasure, hedonistic in nature, thus leaving the theory open to attacks on anti-hedonistic grounds or from arguments that it is impossible to judge between pleasures.

Taking a more sympathetic position to utilitarian ethical theory in an attempt to address the problems faced, a negative approach to utilitarianism may be useful, as below.

The negative approach: the standard or classical form of utilitarian theory concerns the maximisation of utility, well-being, welfare, happiness, pleasure, desire, satisfaction and numerous other measures of the good. While the negative approach's main purpose or concern is the elimination of suffering, a moral agent may act in one of two ways:

- By abstaining from acts that will cause suffering
- By relieving or preventing suffering

This negative approach to utilitarian ethical theory does not contain the weaknesses of the classical approach. In standard form a moral agent must act for the greatest good at every moment in an almost altruistic utopian manner. Whereas with the negative form a moral agent is not burdened with this and only needs to consider that their

actions do not cause harm, or act if he/she can relieve suffering. Further possible advantages of the negative form include:

- Comparison between suffering is easier than between pleasures
- It avoids problems concerning the maximisation of value
- Not causing harm is a requirement but preventing or relieving suffering is only recommended
- It avoids difficulties associated with fair or just distribution of resources, present within the standard or classical form

Of the other normative ethical theories, two seem to have importance given the research domain; social contract theory and the theory of justice or fairness, as below.

‘Why would people agree to be governed?’ is the basis for social contract theory, whereby members of a society implicitly agree to common moral principles and agree that all will abide by these agreements. Social contract theories can also be used as devices to weigh the interests of the members of a community (Kymlicka, 1991). As we move toward a new form of society, based on information and information technology, a new social contract will be formed.

According to Mason, *et al*, (1995), “Justice requires the comparing and weighing of the conflicting claims of all of the stakeholders.” The ideal goal of ethical justice is for each stakeholder to be treated fairly or justly. There are a number of standards of justice that can be used in producing a fair outcome; for example, distributive justice states that similar agents should receive similar benefits or burdens, retributive justice

states that wrongdoers should be punished in proportion to the wrong done, if the evidence is convincing, and compensatory justice compensates those who have been wronged. Justice is seen by many to be the highest order ethical theory and one that can be used to resolve conflict between others (Mason, *et al*, 1995). Benevolence is seen as a useful way of considering ethical issues. Justice is seen as an artificial virtue that requires complicated reasoning whereas benevolence does not. Further, benevolence will always promote utility unless guided by misinformation, whereas the institutions of justice only promote utility if they are generally respected.

The tables below attempt to summarise the main normative ethical theories, and use criteria such as the focal centre and 'the good' to delineate the theories. Figure 1 is the researcher's attempt to present the ethical theories in a way that expresses the complexities involved. The first main box represents the idea of ethical theories existing as theories alone, relating to the textual representation expressed by Heidegger. This obviously includes normative ethical theory. The second main box draws on these ideas and expresses how ethical theories are used in practice. This can be achieved by identifying ethical issues, by identifying or discovering ethical principles, by using pure argument with singular issue, applied ethics, or by using all available theories together with other techniques in ethical analysis. While these ethical theories do not form a complete or universal typology, they do enable a deeper search of the ethics that people hold in situations. They form a debate within which other views may become known.

Table 2 Normative ethics theories (Wood-Harper, *et al*, 1996)

Label	Beneficiary	Objective	Good
Deontological	Not Considered	Follow the rules	Following the rules
Individual Consequentialist (egoist ethic)	Individual	Maximise good for individual	Happiness, well-being, fame, riches
Group Consequentialist	Group (social group, organisation, nation)	Maximise good for group	Survival, autonomy, ascendancy
Utilitarian	Society as a whole	Maximise good for human race (or all sentient beings)	Life, liberty, standard of living

Table 3 Differences Between Various Ethical Theories (Mason, *et al*, 1995)

Focal Centre	Type	Theories and concepts
Agents	Teleological	Egoism, moral responsibility, virtues, self interest
Actions	Deontological	Moral laws and commands, prima facie duties, rights, privileges, and responsibilities, categorical imperative
Results and stakeholders	Teleological	Consequentialism, Utilitarianism
Justice	Teleological	Fairness, distributive justice, egalitarianism and equality, retributive justice, compensatory justice, civil disobedience

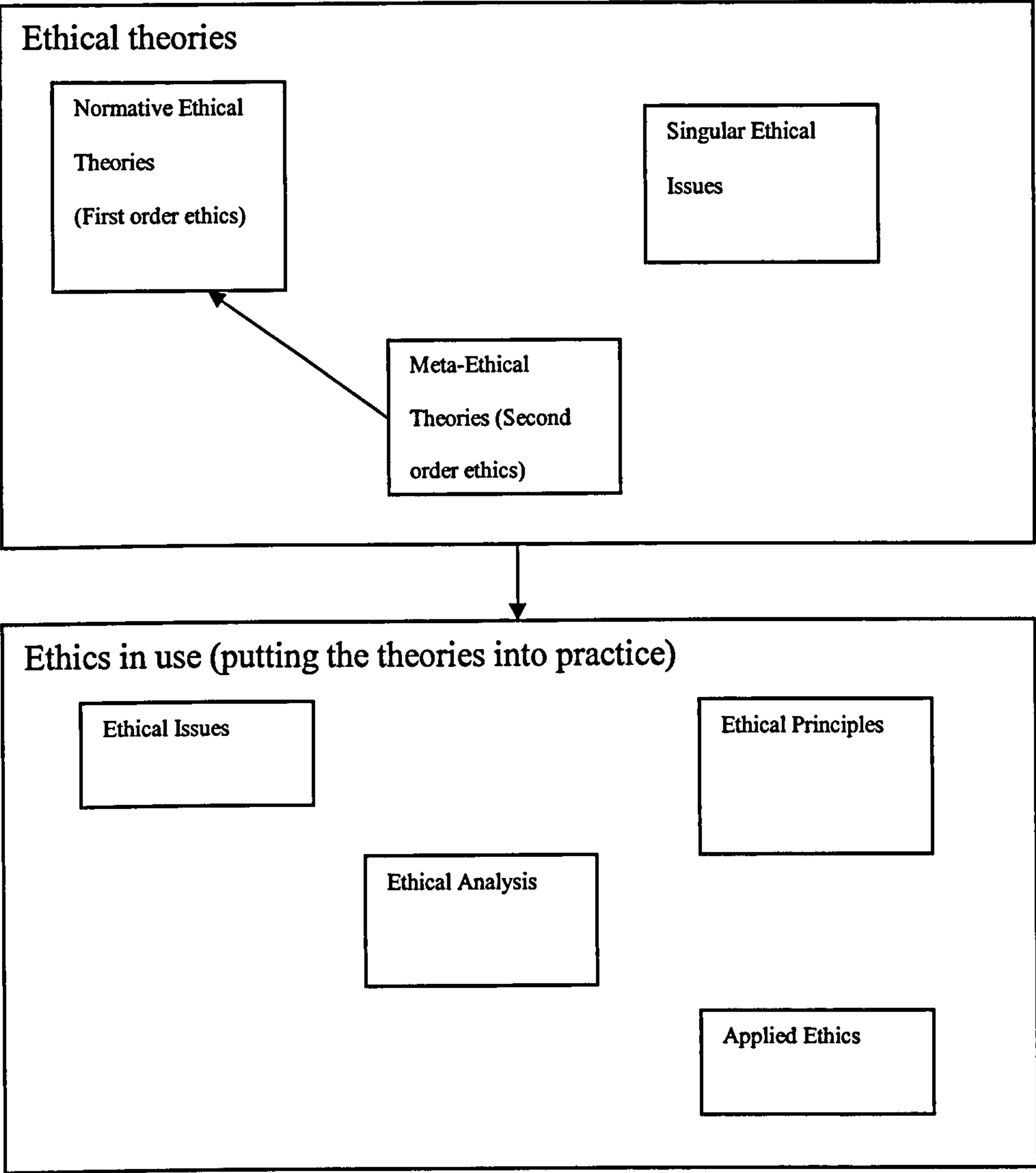


Figure 1 Areas Within Ethical Discourse

The wide-ranging views and debates concerning the nature of ethics and ethical analysis could be viewed as a matter of concern. Looking at the diverse nature of the theories, it is easy to see little convergence. As stipulated above, if we consider that diverse theories cannot be wholly true then it is also easy to conclude that there is little hope for the role of ethical thought within society. However, Singer (1993:2) has suggested that while each strand of ethical thought and each ethical theory may look like a vision of confusion, they are all pieces of the same jigsaw. He suggests that the existence of recurring themes across cultures, time and history represents

proof that each theory is diverging toward the goal of answering the question, ‘how ought I live?’ There is a common goal within the divergent theories which should give us hope.

2.3.2 Heidegger and Ethics

Martin Heidegger, a renowned philosopher of the twentieth century, “denied that his enquires were concerned with ethics” (Hodge 1995). Heidegger’s past is marred by his association with Nazism and for this reason it is all too easy to consider his work as being irrelevant to ethics. While arguments can be made that attempt to justify his association with Nazism, for instance, that his choice may have been necessary for his survival, based upon his position in geography and time, it is more useful to consider the elements within his work that provide insight into the role of ethics in today’s society, a society that is becoming more reliant on technology.

Heidegger saw a world taking shape of rigid technical relations, developed according to their own logic and not through applications of praxis or through human need. With the emergence of the technical relationships, Heidegger saw the end of metaphysics and philosophy, as technical logic does not require human thought (Mitroff, 1983). To Heidegger, metaphysics no longer provided a measure of what is real, and the idea of metaphor did not provide significant levels of analysis. It was the technical realm that was able to describe the world. However, is philosophy only concerned with questions of reality?

There is also a second way of viewing the relationship between Heidegger and ethical thought or theory, which is by challenging Heidegger’s views on the futility of ethics

within his work by careful reasoning, the separation of metaphysical (rational), language and ethical relations. By doing this, Hodge (1995) asserts that three strands of ethics become apparent:

- **Traditional:** this strand of ethics is based on textual representation from classical (historical) philosophy and is hermeneutic in nature, as each person reinterprets the ideas behind the texts. This is the traditional view of ethical thought and is summarised above within descriptions of the normative ethical theories. To Heidegger, such work was devoid of life or reality and had little basis in metaphysics and therefore lacked credibility
- **Humanist:** this strand emphasises reliance on the individual. This was seen, by Heidegger as abstract concern for the well-being of human beings and thus completely lacking in justification
- ***Daisen:*** the third strand is based upon the idea of a human as being involved in the world, and incorporates the notion of language as life, that a human involved in the world responds to language. Heidegger considered questions such as what it is like to be human. How to think or not think? The conclusion drawn from consideration of this and the spread of technical relations was that there is a relationship between technology and language. Ethics can be used to guide the relationship between technology and language, or life.

2.4 Business Ethics

Business ethics is a section of ethical discourse that attempts to use ethical theory and moral ideas as a basis for improving the role of businesses in society. While the

subject matter of this thesis is not business-orientated, or led by a profit motive, some of the ideas from business ethics are useful. These include how the application of ethical theory can be applied in a practical manner and the use of ethical analysis models and theories.

2.4.1 Business Ethical Cases

When General Motors decided to pursue a 'profit motive' when producing the Covair, they did not foresee the problems they would face or the damage they would cause. General Motors sought to maximise profits by cutting costs that ultimately led to a sub-standard and dangerous vehicle. After mounting criticism, one man, Ralph Nader, started a campaign that led to government intervention. This intervention and the subsequent climbdown cost General Motors in both monetary and image terms. General Motors was left with mounting costs, mainly due to the lateness of action, a tarnished image and a reputation for deceit (Hartley, 1993).

It is important to note that communities need business in order to provide economic prosperity for their inhabitants, and business activity also adds to the social fabric of a community. However, the case of the assault on the Ohio Valley highlights the need for business to recognise that it has a duty or responsibility to the community in which it operates. Business and communities cannot seek economic investment and prosperity while disregarding environmental concerns. This case also follows a general cycle of events, through intransigence and run-around, to climbdown after the pressure mounts (Hartley, 1993).

Other famous business cases:

- The Bhopal catastrophe was certainly a tragic event. It also highlights a recurring theme in many business cases, the time taken to realise fault and to take action. This case also highlights the problems with cross-cultural business operation and differing cultural values (Donaldson, 1993; Mitroff and Linstone, 1992).
- The Lotus Marketplace case began with a joint project with Equifax. The project merged personal and verified information with information that was inferred to create a marketing tool. The product was never launched due to the mounting pressure from criticism of its potential to invade privacy (Mason, *et al*, 1995)

2.4.2 Analysis and Ideas

To many moral philosophers, business has always had an unethical or amoral preoccupation with profit maximisation. Indeed, Aristotle considered two types of business activity. ‘*Oikonomikos*’, which was based upon household trading, he considered to be noble and essential for complex societies, whereas ‘*chrematisike*’, which was based upon profit-making, he considered to be devoid of virtue. Today, the notion of profit-making has moved on, with the general acceptance that making profit is not bad in itself. The debate has moved to how profits are seen within the wider context of business activity within society. Solomon (1993) considers thinking in terms of profit-making alone as “ a serious obstacle to understanding the rich tapestry of motives and activities that make up the business world” (Hartley, 1993; Donaldson, 1992; Solomon, 1993).

The Covair case presented above shows that a business cannot ignore its consumers. Business cannot supply sub-standard or dangerous goods through a focus on profit maximisation without the risk of damage to its reputation, image and long-term interests. Business has a responsibility to provide quality goods and services to its consumers while operating within societal restraints. The birth of consumerism, through the actions of individuals such as Ralph Nader has made businesses aware that they cannot disregard their consumers. Business must also be seen to be acting for society to prevent government intervention. This idea is neatly expressed by Hartley (1993), when he states that “any philosophy or course of action that doesn’t take the public interest into consideration is vulnerable in today’s environment.” However, Donaldson (1993) has expressed a valid opinion that the relationship between ethical conduct and profit is a complex one. It is wrong to believe that all ethical criticisms are based upon a profit motive (see paragraph below on business and social responsibility), and it is also wrong to assume that it is always profitable to act ethically (Donaldson 1993, Hartley 1993, Solomon 1993).

Although businesses operate toward their own goals or sets of goals, this is accomplished from within a community or societal setting. In other words, business has a symbiotic relationship with society; businesses cannot be insensitive to society’s needs and demands. Society needs successful business in order to provide adequate amenities and worthwhile activity for its inhabitants. However, businesses need society to provide structures for them to operate, a workforce, and consumers of their outputs. Society needs profits from business but this must be balanced by businesses helping to cultivate desirable communities (Hartley, 1993).

Businesses must expect and prepare for worst-case scenarios, where safety and environmental concerns are at stake, though as Mitroff and Linstone (1993) have suggested, this is not an easy task. They suggest that Western thought is seriously limited when faced with situations where the potential risks are very high but the probability is low. However, a number of important lessons can be learned with reference to the Bhopal catastrophe, including:

- Cost-cutting cannot be the highest priority; it must be balanced with safety and environmental concerns even if these are low probability
- A laissez-faire attitude to cultural difference and change is inappropriate in under-developed countries, especially where safety and environmental concerns are at stake
- Top management must take responsibility for the actions of those under their stewardship

Business cannot avoid its responsibilities to local communities and wider society when seeking to maximise profits through dangerous or negligent practices (Hartley, 1993; Mitroff and Linstone, 1993).

An argument often made with respect to business practice and ethics is that it is the intensity of competition, a 'survival of the fittest', Darwinian mentality that leads to expediency or indifference. A business may adhere to the letter of the law but not its spirit; it may adopt quasi-legal practices that can slip into the grey areas of ethical or moral conduct even though these actions may be against the social norm. This may be justified by either reference to the need to stay afloat at all cost or by a

responsibility to the stockholders, who tend to be considered above all other interested parties (stakeholders) (Hartley, 1993; Donaldson, 1993; Solomon, 1993).

Cases and facts do not speak for themselves, but are filtered by people's perceptions, ideological assumptions and value systems (Mitroff, 1983). They are instead matters of opinion and judgement. Business ethics is not based upon completely objective reasoning but is reliant on values and perceptions. "There is no good reason to believe that scientific judgements can replace value judgements" (Donaldson, 1992; Solomon, 1993).

2.4.3 Methods for analysing cases

Business ethics involves arguments based upon values and facts, and the ethical content of business case analysis is achieved by reflecting on the first order ethical principles, normative ethical theories. There are rival sets of ethical principles , developed from classical antiquity, which can be shown to be irreconcilable; if any one principle is wholly true then each of the others must be partly false.

Arguments using first order ethical principles achieve partial coverage, they express partial truths, they are partial theories due to the underlying nature and frameworks of philosophy. First order principles are based upon meta-theories and philosophies, the second order theories. These are used to appraise the consistency, applicability, and the notion of truth of the first order principles. While the first order ethical principles may be irreconcilable, ethical argument can proceed at levels where subjective irreconcilable differences do not hinder progress. Indeed, a method that uses the

differences of the rival doctrines or first order ethical principles can be put into service using the differences as a way of interrogating the case (Donaldson, 1992).

Mason, *et al*, (1995) created a “moment of truth model” from an analysis of business cases, and this model is portrayed as a device to use when a decision needs to be made that may have ethical consequences. The model rests upon the idea that there are different classes of action; actions can be praiseworthy, unethical or may fall into normal behaviour. The model shown in Figure 2 encourages us to take time to reflect on the effects of our decisions, to use ethical thinking in an explicit manner before making a judgement. Heidegger considered the failure to reflect on our actions concerning ‘technical relations’ to be an ethical crisis. The moment of truth model, or the ideas behind it, together with other devices, may help to alleviate such a crisis. This model also follows the flow, that businesses tend to act only when there is an overwhelming case against them, they evade ethical concerns, of the vast majority of business cases highlighting the need for ethical thinking in business. Donaldson (1992) suggests that business case analysis can be used to identify evasion techniques and can be used to make evasion explicit. Evasion can then be exposed and dealt with accordingly (Donaldson, 1992).

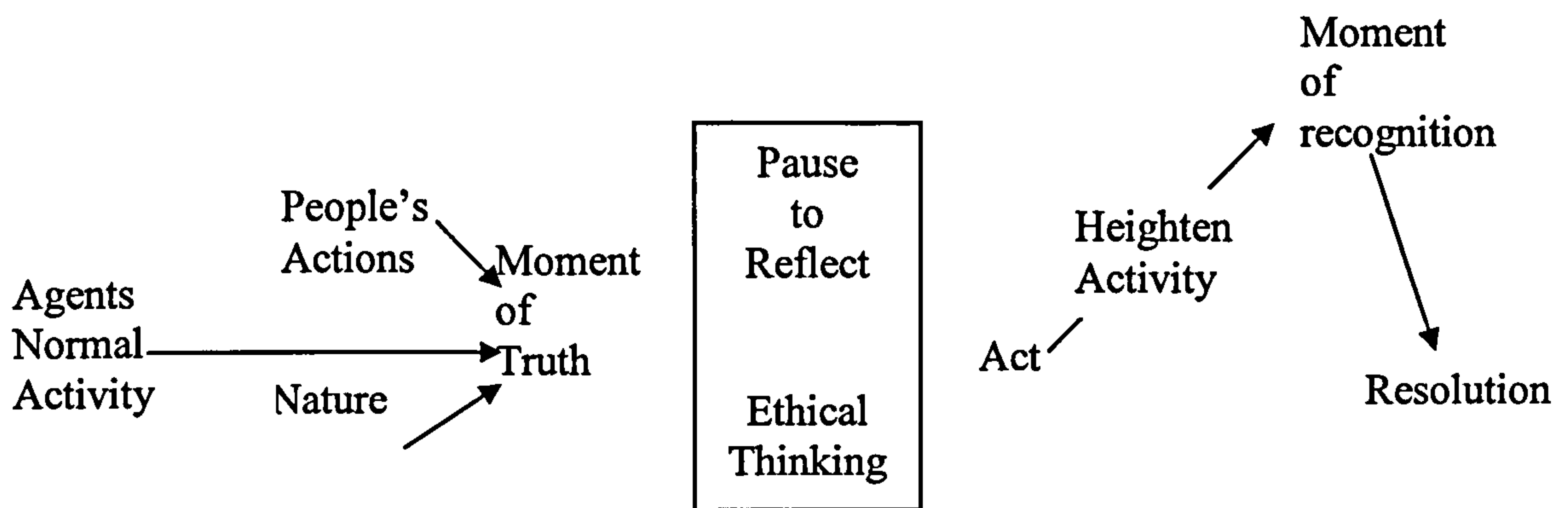


Figure 2 Ethical Thinking: “Think Before You Act” (Mason, *et al*, 1995)

2.4.4 Business ethics and stakeholders

According to O’Toole (1985), a stakeholder is “a person or group that has a legitimate personal interest in the success of the organization.” The emergence of the stakeholder idea within business is important, and the idea is used to attempt to broaden the reach of business ethics to all those involved. Whom businesses serve can no longer be taken for granted. Businesses now have a large network of interested parties and may also have social or community obligations.

The use of the stakeholder idea in business ethics is not without criticism. These criticisms include:

- Stakeholder ideas do not provide a rule or method for judging questions such as, ‘who is entitled to hold the stakes?’ Weighing the stakes is different in different circumstances and requires human intervention to distinguish whose interests are to be included or realised. A similar problem arises if the stakeholders judge their own interests, which is often no more than a power struggle

- Stakeholder ideas are by their nature limited to interests rather than principles. Principles in general are much more difficult to surface and identify and can rarely be satisfied through the trading of stakeholder interests. In the interest model, someone needs to identify that some stakeholder's interest has or could be harmed before it can be considered, although this identification process is not needed for the application of principles

In short, if there exists some agreement on the procedures for the identification of authentic stakeholders and their legitimate claims, and a defensible adjudication method, then the role of stakeholder analysis within (business) ethics has potential. However, each of these is highly problematical and, even if solved, the process cannot replace the idea of ethical principles (Donaldson, 1992).

2.4.5 Business Ethics and Codes of Conduct

Codes of ethics tend to be expressions of technical, prudential and moral imperatives. They are offered as highly practical sets of rules and guidelines; they do not in general contain structures to allow debate or argument, and attempt to protect themselves from discussion.

Businesses do not have firm clear singular goals; indeed, firms do not either admit to or aspire to a single goal. They generally have a value content, which includes the legitimate interests of the shareholders, customers, employees and the general public (the stakeholders). One flaw that codes of business conduct face is their reliance on the technical treatment of ethical concerns. Such codes of conduct do not recognise

that there is a stronger duty to our ethical or moral obligations than technical obligations. The following quote from Hume emphasises this point:

“if the claim is made that business has social responsibilities then no set of responsibilities can be expressed through technical treatment... ought to be matters of grounded debate among those who are affected by the activities of companies.” (Hume, in Donaldson, 1992)

Likely reasons for adoption of codes of conduct:

- Businesses cannot be reduced to techniques - the rise in consumer pressure (environmental and trade associations) and the need for consumers to be consulted has alerted businesses to their social role
- Scandals and litigation - the section above described some scandals that resulted in losses due to legal payouts and lost revenue due to ill will. Business may have turned to codes of conduct to help prevent or provide protection from such eventualities
- The juxtaposition of disparate sets of morals based upon cultural differences and globalisation has led to the introduction of codes of conduct dictating minimal requirements

The usefulness of codes of conduct:

- They inform people of what is ‘expected’ of them
- They offer guidance as to how it can be done

- They express values that many participants aspire to, or at least claim to do so
- They can, and often do, raise ethical standards

The limitations of codes of conduct:

- Their expressions of values can be vague, general and bland. They do not enthuse people to act in moral manner
- Their ethical content can be minimal; only the bare essential is asked for
- People tend to ‘do the right thing’ because they are sheltered by the code (in general they do not aspire to look beyond it)
- People can be at odds with codes of conduct, there is often conflict between professional and personal codes, and “in the frequent cases of conflicts of interests the codes cannot provide guidance, and tend to remain silent” (Donaldson 1992)
- They apply to a subset of participants; given their voluntary nature, only those who would act in the right manner may actually use the codes
- Ethical codes have a limited and varying manner of enforcement and any such enforcement of morals devalues them
- Conversely, if codes are not enforced their effectiveness can be reduced
- Non-enforced codes can be evaded, or participants may pretend to operate them but gain advantage by not doing so

Codes of conduct, on the whole, provide a helpful means to move the idea of business ethics forward. Ideally, codes of conduct should be based upon value systems.

2.4.6 Business Ethics Summary

To summarise, a number of important lessons can be learned from business ethical discourse. It is desirable for businesses to seek a trusting relationship with their customers. Furthermore, there is general consensus that other interested parties or stakeholders should also be considered. Businesses should operate within the structure of society and within local communities; they should have responsibilities toward these communities and general society. Above all, businesses operate on value systems; value judgements cannot be ignored in favour of more concrete technical evaluations. The legitimacy of the idea that businesses have social responsibilities has received some attention and debate. However, it cannot be said to be settled, or even that it could be settled.

2.5 Information Systems Ethical Discourse

Ethical consideration has been much neglected by IS researchers in the past, but now more and more, researchers are becoming aware of the need to consider the effects of information technology on individuals, groups and society. This section presents a selected review of information systems ethical discourse. Firstly, ethical issues arising from the introduction or use of information technology are discussed; then two ways to approach these issues are described, either through ethical codes of conduct or by ethical analysis. Following this, the implications of teaching ethics to IS and computer science students and professionals are considered. Other research that does not fit easily into the themes is presented in a section as ‘other IS ethical discourse’.

2.5.1 Issues

Mason (1983) presents four issues concerning information systems and ethical reasoning; property, accuracy, privacy and access. Mason, *et al*, (1995) uncover other issues that require our concern, such as property, privacy accuracy, access,

burden, gatekeeping and the psychological effect of information technology. The revised issues are regarded as tensions and are presented in the form of questions, providing “a rich set of new ethical issues,” that “... serve as a kind of early warning system to alert us to problems we will encounter as we continually reinvent our information society” (Mason *et al* 1995). Who owns intellectual output and who is entitled to it? How private is personal information and who is entitled to it? How are accuracy and quality of information to be safeguarded? Who gets access to what kind of information under what conditions? Who has the right to control the flow and content of information? Information technology: workplace handmaiden or wolf? Of these issues or tensions, privacy seems to attract a large number of researchers. For instance, Sipior and Ward (1995) discuss the ethical nature of email privacy, concentrating on the legal aspects of the dilemma. An important issue that Sipior and Ward (1995) raise is the burden on the injured party to demonstrate an intrusion into a private affair and that this intrusion would be highly offensive to a reasonable person. Sipior and Ward (1995) conclude by stating that “organizations must formulate their own internal email policies” (Sipior and Ward 1995). Weisband and Reinig (1995) also look at email privacy but do so by addressing user perceptions about email security. They present a number of theoretical explanations about why people view email as private. These include:

- user experience of technology, password and interface design
- management policies that influence user perceptions of privacy
- social effects, “psychological effects of email that encourage self-disclosure, development of interpersonal ties and new norms of social behaviour”

Weisband and Reinig (1995) suggest that “an email policy that recognises employee expectations of privacy creates an atmosphere of trust among managers and employees....” (Weisband and Reinig 1995).

2.5.2 Codes of Conduct

The first approach to the use of ethical thought within the information systems discipline to be examined here is the use of professional codes of conduct. According to Anderson, *et al*, (1993), early codes of conduct served to enhance the status of a profession and tended to list possible violations associated with sanctions. But “recent codes of ethics emphasise socialisation or education rather than enforced compliance” (Anderson, *et al*, 1993). With this new direction in mind, Anderson, *et al*, (1993) contend that codes of conduct assist individual decision-making and suggest nine classes of ethical decision-making, in the form of cases, that can be addressed by applying the ACM Code of Ethics and Professional Conduct. “These cases in turn address the topics of intellectual property, privacy, confidentiality, professional quality, fairness or discrimination, liability, software risks, conflicts of interest, and unauthorised access to computer systems” (Anderson, *et al*, 1993).

Cohen (1996), while recognising the importance of culture and its relationship to ethics, stated that, “it is clear that the most commonly used principles for ethical analysis are insufficient to help decision-makers deal with cultural diversity.” He contends that a better approach to ethical analysis is needed, that teases out the cultural from the absolute, and concludes by calling for “a cross-cultural code of behaviour for IS that considers the issues of cultural variation.” (Cohen, 1996).

A number of researchers have identified problems with the notion of codes of conduct. For instance, Prior (undated) notes that codes of conduct, “do not address the wider issue of the ethical nature of the systems being developed.” Further, “ethical considerations for the computer professional typically deal with what you do after you sit down at a terminal. However, an initial consideration should be why one is sitting down at the terminal in the first place.” (Summers and Markusen, in Prior, *ibid*). Prior (*ibid*) calls for an Hippocratic oath for IS professionals to deal with this issue. Byrne and Wood-Harper suggest that the dominance of analytical thought, “leads to a rationalistic choice of ethical stance,” and further, that, “all too often the IS professional relies too heavily on rules or codes of conduct they do not, in general, consider other ways of coming to an ethical decision.” (Byrne and Wood-Harper, 1997). This is a view shared by Hussey (undated), who states that “ethical codes encourage professionals to view morality in a grossly simplistic deontological way” (Hussey, undated), whereas Walsham (1996) suggests that codes of conduct do not consider the problem of conflict between ethical theories when more than one view is included. This criticism can be summed up by the statement that “.... an approach to the ethics of computing based on rationalist ethical theories and comprehensive, reasoned codes cannot function as intended in the social circumstances which surround the computing profession” (Spaul, undated).

2.5.3 Ethical Analysis

Ethical analysis, the second approach to ethical concerns within the IS discipline, is the development and use of thinking tools to assist others in the consideration of ethical quandaries. The ethical analysis approach attempts to expose the latent ethical conflicts within a given situation. Mason, *et al*, (1995) present a model for ethical reasoning which shows how the rich set of normative ethical theories can be used as

lenses to provide corrective vision for an ethical judgement. They provide four fundamental focusing questions that can be answered, they contend, by applying the various ethical theories. The questions are:

- Who is the agent?
- What action (or actions) was actually taken or is being contemplated?
- What are the results or consequences of the act?
- Is the result fair or just?

Mason, *et al*, (1995) further discuss an hierarchy of ethical reasoning: “ethical reasoning bases judgements and actions on rules, codes or guidelines, which in turn, are based on ethical principles, which, in turn, are grounded in ethical theories.” They claim that “the final arbiter in this chain, if no other dominating principle emerges, is the concept of justice” (Mason, *et al*, 1995).

Wood-Harper, *et al*, (1996) present “a basis and rationale for conducting ethical analysis as part of the information systems development process.” In common with Mason, *et al*, (1995) they draw on available normative ethical theories. However, they marry these to stakeholder analysis and assumption surfacing, contending that “ethical analysis can be viewed as a special case of assumption surfacing.” A further departure is the use of soft systems methodology or SSM (Checkland, 1981; Checkland and Scholes, 1990) to underpin the analysis, with the specific use of the CATWOE mnemonic to operationalise the stakeholder's perspectives within the problem situation. Wood-Harper, *et al*, (1996) assert that “there is a dominant ethical belief that is useful in understanding behaviour and gives a general predictor of group

behaviour.” By using the dominant ethical perspectives of the stakeholders, Wood-Harper, *et al*, (1996) develop a conflict web to identify where conflict resolution techniques are required. They conclude that “ethical analysis provides a more defined approach for teasing out the perspectives present in a situation.” (Wood-Harper, *et al*, 1996).

Others have proposed frameworks for ethical decision-making; for instance, Velasquez, *et al*, (1997), in common with the above, use general moral theories to guide what ought to be. Elsewhere, McDonald (1997) specifies a five point plan: 1) identify the problem; 2) specify feasible alternatives; 3) use your ethical resources (ethical or moral theory) to identify morally significant factors in each alternative; 4) propose and test possible resolutions; and 5) make your choice, live with it and learn from it.

2.5.4 Teaching Ethics within the IS Discipline

For many years the material taught to IS students and professionals was based mainly on the technical aspects of the subject. Little or no emphasis was given to potential harm that may result from such developments. “The information systems person frequently receives little or no training in ethical implications, adopting without question the ethical neutrality of their efforts” (Wood-Harper, *et al*, 1996). However, there is now a growing acceptance that ethical theories and the implications of information technology should be part of computer science and information systems curricula, for instance that “computer scientists in industry regularly face questions requiring professional judgement that cannot be answered in precise mathematical terms” (Huff and Martin, 1995), and that “the social and ethical context of computing

is fundamental to the computer science curriculum” (Anderson, *et al*, 1994). Such a curriculum may integrate ethical and social analysis to provide a number of ethical issues areas and levels of social analysis that can be understood through ethical/social principles and skills (Anderson, *et al*, 1994; Huff and Martin, 1995).

Others take a different view. For instance, Warren (undated), although addressing business ethics, specifies a number of aims for an ethical course, thus (amended):

- To depict business as a systems of relationships, responsibilities and purpose in society
- To challenge cynicism and destructive attitudes
- To help students develop moral awareness and imagination
- To introduce ethical theory and argument
- To enable students to develop skills of advocacy and debate on matters concerning social values

He emphasises the need to address students’ character development, stating that “business ethics needs to engage the attention of students and prepare them for a challenging career by developing their characters so that they can act with integrity and moral imagination in all that they do.” A useful and widely used technique for teaching ethics is the use of ethical scenarios and some argue that “the most popular technique appears to be what is variously called the case study or ethical scenario” (Liffick, 1995).

Liffick (1995) presents a methodology that assists students to analyse ethical scenarios. This approach differs from the above because ethical theories are not used. He states:

- the nature of an applied course and that students have little affinity for such theories
- “it is not at all clear that learning such theories make students any more adept at solving ethical theories”
- codes of conduct incorporate a particular point of view about the nature of ethics

2.6 Other IS Ethical Discourse

Messick and Bazerman (1996) state that possible unethical decisions may not stem from profit motives or callous disregard of other people, “but from psychological tendencies that foster poor decision-making, both from an ethical and a rational perspective.” They further provide three theories to attempt to explain such psychological tendencies; about the world, other people and ourselves. Among the issues featured in these theories are the limiting of the search for stakeholders and the problems associated with probability, uncertainty, and the misjudgement of risk. Mitroff and Linstone (1993) also highlight some of these during their analysis of the Bhopal catastrophe.

Some researchers have argued that information systems development methodologies do not assist their users in the application of ethical ideas. Wood-Harper, *et al*, (1996) suggest that users accept the implicit ethical stance of a methodology, an ethic of high

efficiency, effectiveness and functionality that is not socially and morally acceptable. Walsham (1993), drawing on the work of Maclaren, *et al*, suggests that the majority of traditional IS development methodologies do not cater for ethical issues, or that “ethical issues receive no explicit attention in such methods” (Walsham, 1993). One of the reasons given is that these are methods with a technical orientation. Walsham (1993) further develops a notion of the analyst as moral agent, which he contends is not catered for within traditional IS design methodologies.

This role of the analyst as moral agent is a development of the emancipatory role as defined by Hirschheim and Klein (1989), and is in conflict with the idea of system experts as found within the functionalist role. Byrne and Wood-Harper (1997) suggest that analysts with a dominant ST decision style would find the notion of a moral agent to be in conflict with their worldview and would thus be reluctant to accommodate it.

More specifically, Soft Systems Methodology (Checkland; Checkland and Scholes) has been critiqued by Walsham (1993), who contends that ethical issues are dependent upon the analyst; “... it is reasonable to argue that its [SSM’s] underlying philosophy does not directly support a concern with moral issues” (Walsham 1993). Atkinson (1989) takes a similar line and states that moral judgements are implicit in a number of areas within SSM, including: the decision to use SSM; the continued exploration of a root definition; the moral nature of particular worldviews; the choice of metaphor; the comparison between the models and the real world.

Rogerson (1997) examines project management practice with respect to the ethical issues surrounding the software development process. By applying ethical principles to areas within a project management cycle Rogerson identifies ‘hot spots’ where more effort is applied to key ethical issues. He states that “project management should be guided by a sense of justice, a sense of equal distributions of benefits and burdens and a sense of equal opportunity”

2.7 Soft Systems Methodology and Stakeholder Analysis

The first chapter of this thesis defined an area of concern. The first parts of this chapter have outlined research material concerning issues related to the information society and ethical theories and relevant discourse. These provide the two main conceptual areas for the conceptual framework and also provide an ethical basis for the study. This section presents a discussion concerning the two approaches that form the underlying structure or operational elements of the conceptual framework. Both of these approaches are well researched and used within IS discipline, and moreover, as the discussion below will show, the two approaches can be successfully combined to provide a strong theoretical approach for understanding ill-formed, messy and problematic situations. This section continues by briefly describing each method, presenting background material of their use, and considering the legitimacy of combining the methods.

2.7.1 Soft Systems Methodology

Soft Systems Methodology (SSM) is a problem solving approach developed from systems engineering. Systems engineering attempts failed when applied to messy, changing and ill-defined situations. Thus SSM “is a problem solving methodology suitable for messy problem situations” (Checkland 1989). Messy problem situations

are tackled through a learning system and a process for managing purposeful activity through human activity systems. However, purposeful activity can be interpreted in different ways, so in order to express purposeful activity one needs to talk of the worldview or *weltanschauung* of the participants.

Soft Systems Methodology comprises seven stages, which do not have to be strictly adhered to, spilt between the real world and systemic or conceptual thinking about the real world. The stages range from the formulation and expression of the problem situation, through the conceptual modelling of the human activity systems, leading to the comparison of these models with the real world. This allows for a debate about possible changes in the problem situation that are systemically and culturally feasible, which lead to actual changes to the problem situation (Checkland, 1981; Checkland, 1989; Checkland and Scholes, 1986).

Soft Systems Methodology is particularly suited to this study because of its ability to explore messy and changing situations, or situations where the objective is ill-defined, through learning.. Moreover, SSM provides a strong foundation or structure for the analysis of the situation and the subsequent ethical exploration.

Soft Systems Methodology has been applied to a number of areas within the IS discipline, including information or business strategy, requirements capture and analysis, software or IS quality, IS evaluation, ethical analysis and many others. The following paragraphs present why SSM was chosen for these situations or problem areas, how it was used, and what was learned from the process.

Soft Systems Methodology has been used, particularly within the Lancaster research community, to consider business and information strategies. This application tends to make use of workshops attended by representatives from the client organisation, formed into working groups.. Within the workshops, the techniques of SSM are taught to the working groups, who then apply what they have learned to their own problem situation. The lessons from this mode of use include:

- SSM is simple to use but is very powerful. Members of organisations who are not proficient in SSM can still attain good results from its use
- SSM does not oblige people to adhere to strict guidelines and paths, and because of this a strong leader is required
- The use of example SSM studies is the best way of instructing people in the use of the methodology, provided they have received an introductory explanation of the concepts
- Team working promotes communication and shared understanding within the groups, who may stem from different areas of the organisation
- Communication needs to be planned, and outputs from various stages need to be fed back to people in order to hold their attention

While it is clear that this mode of SSM has many benefits, this does not preclude the use of SSM in different ways. The method may be used by an individual to analyse a problem situation (Checkland, *et al*, 1996).

For requirements analysis, soft systems thinking was seen as a potentially rich device or thinking tool to organise thoughts and to avoid a reliance on a means-end

orientation to problem solving. This potential use of SSM was considered after evidence of software, or more correctly, systems, failure prompted researchers within the IS discipline to consider alternative approaches to requirements analysis.

However, SSM has been criticised as a tool for collecting requirements specifications. These criticisms stem from the inability of SSM to present real world definitions of a system that can be implemented as a logical or technological solution. Vidgen, *et al*, (1996), have shown that while SSM provides “a powerful means for re-conceptualizing the problem situation”, it does not provide specific requirements to satisfy real-world customer demands, and thus concluded that requirements capture was complementary to the conceptual analysis of SSM.

This limitation of SSM partly stems from a theoretical debate between hard and soft systems thinking and how the two may be combined. Approaches to the combination of the two theoretical positions include: combining SSM with data-driven methods; using multiple techniques within a consistent conceptual framework, as in Multiview (Avison & Wood-Harper 1990); using mediation of the conceptual thinking of the real world and the real-world requirements, technical artefacts, and the current and future situations (Vidgen 1997, Avison, *et al*, 1996).

As with requirements analysis, the potential use of SSM as a framework for IS quality was based upon the need to broaden the approach to IS quality. Traditional approaches to IS quality were based upon a production view that considered the manner in which technical artefacts were produced, attempting to control this by the use of software metrics and stringent procedures (Vidgen 1996).

This dominant view did not address the context or setting of the resultant technical artefact. A notion of IS or use quality was considered a possible way to redress this limitation. SSM provides a framework in which the notion of IS quality can be considered. The use of SSM for IS quality may be justified by its relevance: in providing rigour to systemic thinking about complex situations prevalent within IS quality; through SSM's ability to surface and explicate the cultural aspects of the situation, which may be affected by social and political constraints, through participation; by considering the ends (defined by the context of the system, its use quality) in a means-ends relationship to be problematical; through its emphasis on seeing the process as a cyclical learning process.

Within the IS quality application of SSM, the 5E's are used to provide a relevant notion of use quality. This use of the 5E's, as part of the control and monitoring aspect of a SSM human activity model, allows the success of the transformation , relevant to IS quality, to be judged.

This forms the logic-based stream of analysis through the creation of human activity systems, and the application of the 5E's quality factors can be discovered. Importantly, the cultural aspects, the social and political constraints are also discovered through the stream of cultural analysis. Therefore, the resultant systems of IS quality can be seen as systemically desirable and culturally feasible.

2.7.2 Stakeholder Analysis and Assumption Surfacing

“A basic tenet of moral theories is to treat people with respect which can be done only if the interests of all concerned people are honestly considered” (Messick and Bazerman, 1996). Stakeholder analysis is a process that attempts to achieve this by making the process explicit. Taking the definition of a stakeholder as:

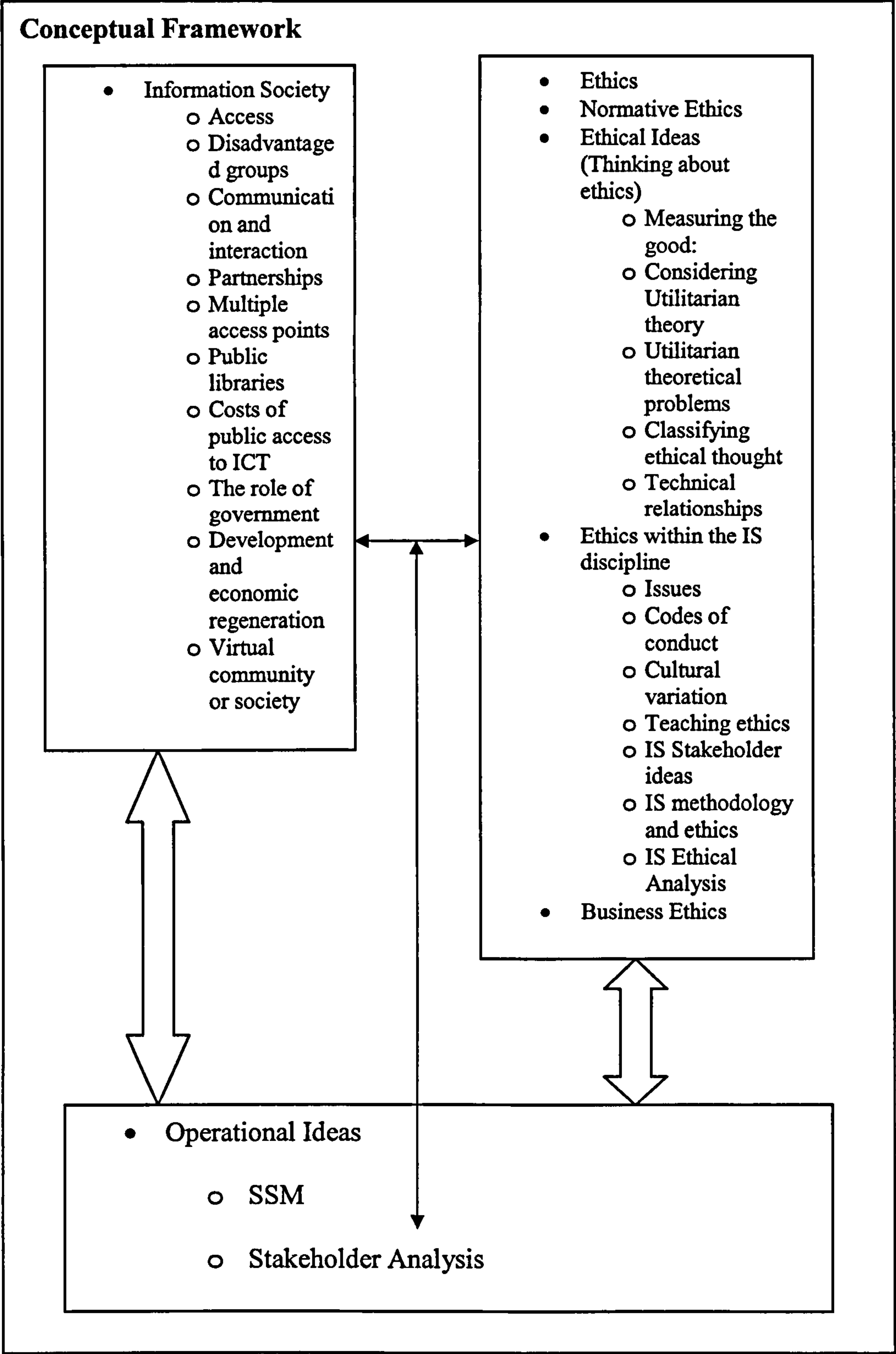
“any individual, group, organization, institution that can affect as well as be affected by an individual’s, group’s, organisation’s, or institution’s policy or policies” (Mitroff & Linstone, 1993).

The process begins by identifying stakeholders within the situation, given the above definition. A stakeholder map is then drawn, to aid in the analysis of the stakeholders and their relationships or influences. Generally, people posit different behaviours to stakeholders, and they make different assumptions about them. Assumption surfacing allows these assumptions to be made explicit. By considering the importance and certainty of the assumptions a more complete picture can be formed. Wood-Harper, *et al*, (1996) suggest the use of stakeholder analysis and assumption surfacing for ethical analysis, to tease out the ethical perspective of those involved. The introduction of ICT into the community has the potential to touch a wide spectrum of people and alter their day-to-day lives. It is generally the case that the more complex or messy the problem, the more stakeholders will be involved and the more assumptions will be implicitly made (Mitroff and Linstone, 1993). Given this, the use of stakeholder analysis may ensure that the interests of all those concerned within the community can be explicitly examined.

2.8 Conceptual Framework Creation

This section draws from the material and discussions above to create a conceptual framework that will be used throughout the remainder of the thesis. The use of a conceptual framework in research studies such as this is vital. The framework not only provides a context in which ideas and events from the fieldwork part of the study can be surfaced and understood but also provides validity to any lessons drawn from these (Checkland, 1991).

The conceptual framework defined and described here takes themes and important ideas from the above discourse and places them within a defined model. During the creation of the framework, each theme or idea is further explored and explained, and, where appropriate, the importance of particular elements to the research is provided. The simple model below depicts an overview of the conceptual framework, clearly showing the dependencies and interactions. The large arrows depict the supporting nature of operational ideas, the smaller arrows, the interaction.



2.8.1 Information Society

Access: the idea of providing access plays a central part in this research study. The different meanings and ideas associated with the term will be a useful aid when considering how access is used by participants within the research subject. Is the term

used, as is most common, in a technological sense providing access to the electronic equipment and infrastructure? Or is 'access' used in a broader fashion, covering such ideas as training, support and motivation, all leading to either the provision of information, information-based services or the ability to communicate? The ability to place or affect content will also be used in the consideration of access.

Disadvantaged groups: disadvantaged groups are in general targeted by many public initiatives and endeavours; this seems especially true for ICT projects. Such projects are often given names such as 'civic networks' to denote their social or civic responsibilities. They tend to serve the public interest and aim to provide social benefits through information and communication technologies provided free to members of a local community or targeted disadvantaged group. Among the social benefits are increased access to relevant information, social communication and participation within the local community (Law and Keltner, 1995; Keenan and Trotter, 1999; Buie, 2000). How participants within the research subject consider disadvantaged groups and how they cater for them will be a significant part of the research study.

Communication and Interaction: the importance of meaningful communication and interaction between people taking part in public ICT initiatives is seen as vital to the validity of such projects and their claim to aid in the regeneration of communities. The need for communication and interaction is often considered against the bland or sterile provision of web content, such as community or village hall websites (Buie, 2000). While the importance of communication is acknowledged, especially as the technology allows people to conquer distance and time, it is also important to

recognise that being able to communicate may not solve day-to-day living problems. As such, other information-based services should not be overlooked by dominance on communication and interaction (Buie, 2000; Keenan and Trotter, 1999).

Partnerships: the need for wide-ranging partnerships is common throughout the vast majority of ICT initiatives and projects providing public access to ICT. This approach seems reasonable given the wide range of services that are offered by such projects. The role of partnerships also seems self-evident; partnerships will help spread burdens across a number of agencies and even local businesses, and help to disperse the locus of ICT throughout a community. Furthermore, they provide a useful source of knowledge, which is broadened by the different backgrounds and skills of the participants. The only caveat associated with partnerships is the greater reliance on a coherent strategy to help bind the partners together and keep them all acting toward common goals (Horrocks and Bellamy, 1997; Kendall and Wilkinson, 1999; Keenan and Trotter, 1999). Research has also shown a link between key individuals and ICT-based regeneration, and of notable interest is the link to an individual's energy and commitment toward such projects, together with technological awareness and political skill. Key individuals may be needed to pull the partnership(s) together (Southern 2001).

Multiple Access Points: communities providing access to ICT often do so through multiple access points. This can be achieved through partnerships with many community groups and organisations, as discussed above. Provision by multiple access points is seen as a way to broaden the membership or participation of people within the community and thus increase the scope of any benefits throughout the

community. One reason cited is the need to provide different environments to entice a wide range of people, some of who may find it easier to enter one potential access point over others. This follows from very much the common aim to include the widest range of people in such initiatives. There do, however, seem to be burdens related to partnerships and multiple access points, which include the need for careful planning to ensure that each access point is providing the same service or services to community members, and the requirement that the material is centrally created and distributed. Without careful planning the use of multiple access points can result in wasteful duplication of work and perhaps even worse different levels of service from different access points (Horrocks and Bellamy, 1997; Southern, 2001; ; Keenan and Trotter, 1999).

Public Libraries: while initially wary of ICT, public libraries are now using the technologies to deliver new information-based services to the community. The linkage to fighting social exclusion by providing day-to-day problem solving services is an interesting extension to the normal passive role. As part of the framework, it will be useful to consider the role that public libraries and librarians adopt, and whether they offer problem solving services. It will also be useful to consider where they fall in relation to ideas examined above, such as the role of partnerships, multiple access points and how disadvantaged groups are catered for (Kendall and Wilkinson; 1998).

Ideas from the work of Mostert (1999) will also be a valuable part of the framework. The main classifications concerning the three different approaches to the delivery of library-type services are extremely useful. They can be used, for instance, to consider

the aims of project elements, their service attitude (passive or pro-active), and the types of service offered among others. The work also highlights the importance of considering how a project or initiative was incepted as this greatly affects how the project evolves. Evidence for this can be seen from the resource centre part of the work; such centres arose as a direct result of neglect and therefore were structured to counter this neglect.

Costs of public access to ICT: providing public access to ICT requires funds not only for expensive computer equipment and infrastructure but also in resources to grant access to the public. These resources include trained staff able to assist people to gain the information or service they are looking for, and in the collection and provision of content. Among the strategies to meet the financial commitment, are the use of wide-ranging partnerships, sponsorship from local businesses and the involvement of government agencies. Often the potential social benefits are used as a way to gain government backing (Keenan and Trotter, 1999). Funds from the European Union have been a major source for UK funded projects (Horrocks & Bellamy, 1997).

The role of government: aside from finance, 'big government' seems to have a vested interest in the provision of telecommunications, both to provide an infrastructure for the economy and to aid in the fight against social exclusion. From a local perspective, the work of Horrocks and Bellamy (1997) offers some useful insights into the role of local government with the research subject, and some of their insights also have a bearing on issues not directly related to local government, such as the need for partnerships noted above. It is therefore clear that the ideas surrounding

government, both local and beyond, should be part of the framework used for this study.

Development and Economic Regeneration: there seems to be a link between social regeneration of a community and economic regeneration. However, the role that technology plays in this seems to be in question. Disregarding the rhetoric, the link between technology and economic regeneration is not simplistic but complex and subject to external forces and conditions. In other words, economic regeneration cannot be guaranteed solely through the introduction of technology. Perhaps more importantly, economic regeneration benefits from advances in social welfare. Indeed, it seems essential to consider a wide range of areas when considering development and regeneration, such as economic productivity, health, education and poverty alleviation and empowerment (social exclusion), as identified by Madon (2000). It also seems reasonable to evaluate regeneration projects from this perspective (Southern, 2001; Madon, 2000).

Virtual community or society: with reference to information technology, virtual communities seem to be based not on physical locations and structure but on fluid ephemeral entities that are created and recreated by communication between people separated by distance and/or time. Virtual communities, while lacking the robustness of classical physical communities, do seem to be based on a common interest or a set of common goals (Geyer, 1996). The creation of communities through interest or common goals, especially when ICT is used as an enabler, may possibly be useful when considering the role of ICT within a physical community. This is perhaps more useful when considered against the idea put forward by Falk (!998), which suggests

that if ICT serves a community's purpose the more robust the community may become.

Virtual ideas concerning the blurring of reality and alienation do not seem to be of particular relevance to this study. However, they may offer useful insights into people's experiences with ICT and can therefore not be discarded. For example, someone may not feel comfortable with using certain aspects of ICT and indeed may not grasp the concepts. In this case, the notions of different realities and alienation, while not used in the popular or sensationalist sense, may prove useful. Also worth consideration are Geyer's ideas concerning the advantageous and disadvantageous aspects of virtual and physical communities. It may be easier for some people to get information from some sort of access point, rather than to deal with real people.

While most of the work concerning computer-mediated communication (CMC) is not wholly related to this research project, some aspects of the work are valuable and are explained below:

- In looking at the emergence of community through CMC, the accepted task-based role of CMC is questioned. The task-based view emerges from the original organisational context of CMC, where the technology was used to assist members of a group to complete a task. By accepting that the technology can have a social presence, interaction between members of a group becomes social in nature. This may also lead to informative and interpretative practices, where the members of a group become a powerful resource. It is this aspect that may be useful when considering the use of such

technology to create informed communities. Also of use from this area of work is the consideration of various factors that impact on CMC, including the temporal nature of the interaction and the physical aspects of the technology (Baym, 1995).

- Jones (1995:2) presents an understanding of community in the information age, in which he stipulates that cybersocieties are not just for the transmission of information. However, cybersocieties may be created by sharing of information through social construction or social networks, where participants move through a social space created by them. Indeed, he sees CMC as an “engine for social change” that should not promote efficiency at the expense of social contact; unfortunately, social contact is used in a virtual sense given the context of CMC.
- An understanding of the creation of community through CMC is given by Baym (1995). People interacting with technology for communication appropriate mechanisms and structures for the use the technology through existing social interactions and norms. Community is created through emergent social dynamics where participants appropriate or use technology in innovative and unexpected ways through expression, the creation of identity and relationships. “The creation of forms of expressive communication, identity, relationships and norms through communicative practice in computer-mediated groups is pivotal to the process of creating community” (Baym, 1995).
- The notion that communities develop through innovative and unexpected uses of information technology provides a counterargument to the idea that the needs or wants of the community should be discovered first and the use of

information technology should be considered afterwards. The counterargument is that the true nature of the interaction with the technology, and thus, the community, can only be discovered through the introduction and use of the technology. Further, that the introduction of information technology may assist in the process of discovering a community's needs or that the community's needs may change as a consequence of the introduction of such technology. This argument will need to be explored during any research that considers the introduction of ICT into communities and is seen as important for this study

- One of the most important issues raised through this work is the realisation that studying computer-mediated communication or virtual communities may require different research approaches. The question is how we study the virtual or something that is continually being created

2.8.2 Ethics

Normative Ethics: the passages in section 2.3 above clearly defined the normative ethical theories and summarised their particular attributes and distinguishing features. It is not useful to reiterate this here instead this short passage will yet again highlight the importance of these theories to this research study. Normative ethical theories have benefited from a substantial history of development, from the great philosophers to the present day. This history and the solid foundation that this history indicates justify the importance of these rich theories. A glance at the following passages demonstrates how normative ethics permeates through all of the ideas. The next section details ideas that stem from ethical thinking which themselves stem from normative ethics, whereas the passages on ethical analysis draw on normative ethical

theory for their foundation. In short, normative ethical theories are paramount to this conceptual framework and the research study as a whole (Laudon, 1995; Dancy, 1993; Mason, *et al*, 1995; Wood-Harper, *et al*, 1996; Baier, 1991; Singer, 1993; Quinton, 1989).

Ethical Ideas (Thinking about ethics)

Measuring the good: one aspect of ethical reasoning that is especially related to consequence-based ethical ideas is the idea of measuring the good. By reviewing the history behind utilitarian theory, Quinton (1989) uncovers various methods for measuring the good. These range from pleasure or hedonistic-based ideas through aggregation and even experimental reason. It is also important to note that there are different ways to think about the good, not just different types of the good. These ideas will be invaluable when considering the positions of people within the research subject.

Considering utilitarian theory: the paragraph above discussed ways of measuring the good; this is an integral part of any utilitarian theory. The section on utilitarian theory has shown that while there are different ways of measuring the good there are also different ways of conceiving utilitarian theory itself. While using the ethical analysis method it may well be useful to consider not only if a utilitarian position is being used but also to consider how the position is constructed. Is it based on reason or demonstrable truths, available for all to be discovered, or are they inward in nature, based upon emotion and passion? This idea also highlights the possibility of considering other ethical theories as multiple types, thereby raising awareness of the need to consider the intent behind an ethical position. In other words, what do we

mean when we claim to be taking a deontological position? Are we merely following the rules or do we have passionate claims about the rules we wish to apply? (Quinton, 1989; Singer, 1993; Mason, *et al*, 1995; Wood-Harper, *et al*, 1996)

Utilitarian theoretical problems: all utilitarian theories face difficult problems due to the attempt to provide good for all. These problems include moral agents being forced to act for the good of all in all situations and the difficulties faced with measuring the good for all in the first place. It is worth using these limitations to consider other ethical theories or to consider the positions adopted by people through these ideas. The negative approach, a subset of utilitarian theory, seems to offer a solution to some of these problems. As such, the ideas contained within the negative utilitarian approach may offer insight during the analysis of ethical quandary within the research subject (Quinton, 1989).

Classifying ethical thought: there are a number of different approaches to the classification of ethical theory, each offering not only the classification itself but also, as a consequence, useful insights into the structure of ethical thought. The most common approach compares theories to labels or criteria, establishing a taxonomy. Criteria identified include the beneficiary or focus of the theory and what is gained or lost by the beneficiary, the good. While not strictly a classification, meta-ethical theories, also known as second order ethics, consider the underlying theories behind the classical normative ethical theories. By so doing, the meta-theories provide building blocks that provide for a method of classification. The work by Hodge (1995), concerning Heidegger, provides another approach to classifying ethics. She further contends that Heidegger considered ethical thought in two ways, through

textual theories (traditional normative ethics) and via human acts of altruism or human feeling (close to virtue theory). Heidegger rejected both of these, however, but Hodge (ibid) considers the notion of *daisen* to be useful with regard to ethical quandary. This leaves us with the initial two ways that Heidegger considered ethical thought, and a third way, which is based upon *daisen*, or on the notion of people judging and acting while being involved in ethical quandary. All of the above classification approaches provide a solid foundation for considering ethics. Figure 1, earlier in this chapter, provided a model of how the researcher views ethical thought and theories. The model does not offer a definitive classification of ethical theories but encourages thinking about ethics and ethical theory. Likewise, the ideas within this section are to be used to think about ethics within real world situations and especially the research subject (Mason, *et al*, 1995; Wood-Harper, *et al*, 1996; Hodge, 1995).

Technical relationships: the notion of technical relationships is another interesting aspect of Heidegger's work. Heidegger considered technical thought to be foreign to how humans act within the world. Following from this, he believed that humans who were forced into thinking in the alien technical world were able not to act as they should and thus their actions were not legitimate. Mitroff (1985) has also shown that the technical and human worlds are different when he considered the role of stories. He contended that technical stories, such as mathematical equations, do not require human interpretation. On the other hand, any stories concerning humans, or stories by humans, require interpretation by other humans to have meaning. These conceptions of the split between the technical and human worlds are deemed appropriate given

that the intervention into the physical community attempts a relationship between technology and society (Hodge, 1995; Mitroff, 1985).

Ethics within the IS discipline: this section considers the relatively recent realisation that ethical issues are important with respect to information, technology and their impacts on individuals, groups and society. A wide number of IS academics and practitioners are now considering ethics within the realm of information systems. The following passages include the most important or relevant aspects from this work.

Issues: many authors consider ethical thought within the IS discipline to be about specific issues, such as privacy, property rights and access. Others consider singular issues that they perceive to be prone to ethical dilemma. Each author presents arguments indicating the importance of an identified issue and then considers how we should approach such issues. It is important to realise that these issues, as portrayed, are always known; they are not hidden by the complexities of human endeavour, they lie in plain sight and are easily addressed (Mason, 1983; Mason, *et al*, 1995; Sipior and Ward, 1995; Weisband and Reinig, 1995).

Codes of conduct: much attention to codes of conduct from an IS perspective seems to fall into the notion of professionalism within the discipline or in an attempt to address known classes of ethical dilemmas. Work by Anderson, *et al*, (1993) attempts to demonstrate how a specific code can be used to address common situations. Others have challenged this by considering either cultural variation, (see section below), or by questioning the narrow or simplistic focus of codes of conduct. Wood-Harper, *et al*, have also shown that codes of conduct are based on a technical thinking style that

offers a safe and comfortable environment where judgements can be made without challenging the accepted norms. A wider approach to the analysis of ethical dilemmas is called for, one that challenges the assumptions of those involved (Anderson, *et al*, 1993; Cohen, 1996; Walsham, 1996; Byrne and Wood-Harper, 1997).

Cultural variation: the notion of cultural variation was discovered during the review of IS codes of conduct. However, the researcher considers the idea worthy of separation. The idea that one particular issue (see above) is seen differently depending on cultural diversification is fundamental to the multi-perspective approach present within the ethical analysis framework.

Teaching ethics: while not directly relevant to this research study, a number of ideas that stem from the work are thought-provoking and as such are included here. The first of these ideas is contained within a set of aims for an ethics-based course:

- To challenge cynicism and destructive attitudes
- To help students develop moral awareness and imagination
- To introduce ethical theory and argument

The first aim here seems to address the ‘who cares?’ attitude toward ethical thought and the role of ethics within society. Once the cynical attitudes have been addressed, the next aim encourages the uncovering of moral issues within society. It is important that the challenge to attitudes and development of awareness is accomplished via a sound background, and this is achieved through the introduction of proper ethical

theory and argument. These ideas may be useful outside the classroom. There may be a need to consider cynical attitudes and to raise awareness of moral issues, all of which should be based upon sound ethical foundations. Another idea closely linked to the above is based on developing a student's character, engaging them within the moral world. One of the most popular approaches to teaching ethics is through case study or ethical scenarios. Given the nature of this research study it is important to be able to derive from case studies (Anderson, *et al*, 1994; Huff and Martin, 1995; Warren, undated).

IS methodology: a section of the review above suggested that the use of IS methodology hinders the application of ethical ideas. IS methodologies tend to constrain problems within a technical domain and thus constrain the thought processes of those who use them. The constraining effect is the important issue as it opens up other questions concerning constraints within the ethical analysis method, the subject and the particular application of the method. Juxtaposing this idea with the notion of technical relationships seems useful: for instance, how do the technical aspects of the intervention constrain its application? (Byrne and Wood-Harper, 1997; Wood-Harper, *et al*, 1996; Walsham, 1993)

IS Ethical analysis: the nature of ethical analysis is one of the most important aspects of IS ethical discourse. IS researchers and practitioners have concluded that proper analysis and understanding of ethical quandary is required for the application of ethics within the IS discipline. Moreover, such analysis is grounded on solid ethical theory. This provides a rigorous foundation from which ethical analysis can be conducted and conclusions, judgements or decisions drawn. This idea of conducting ethical analysis,

attempting to understand situations of ethical quandary, is fundamental to the approach taken by this research endeavour (Wood-Harper, *et al*, 1995; Mason, *et al*, 1996).

IS Stakeholder ideas: it seems “binding at first sight” that all those involved in an ethical dilemma should be considered before decisions or judgements are made. Stakeholder ideas and their application to ethical analysis attempt to address this issue. The researcher considers these approaches useful in the formative stages of the analysis of ethical quandary and thus they will help build a foundation from which ethical thought can be applied. These ideas will help to focus honestly on all of those involved within the ethical quandary faced during the research study (Messick and Bazerman, 1996; Wood-Harper, *et al*, 1996; Mitroff and Linstone, 1993).

Business Ethics: the researcher included business ethics within the literature review as it seemed to contain a number of important ideas concerning the role of ethical thought within society. The researcher believed that while direct relevance to the research study would be limited, the work offered a source of ideas that would be useful. The following passages represent a number of important ideas that were gained from this important area. It should also be noted that the stimulus of business within communities is directly relevant to the research study to a certain degree. Therefore, seeking a business point of view with regard to ethics is considered to be invaluable.

The notion of a profit motive permeates all literature concerning ethics and business. Some consider this to be the overriding driving force behind all business endeavours

and cite a focus on a profit motive as the main cause of ethical quandary. Instead of focusing directly on the profit motive the researcher considers the profit motive to be just another measure of the good. Thinking in these terms one can consider a pseudo profit motive within areas not related to direct monetary gain. For instance, if someone acts with expediency they may be seeking profit, albeit of a different flavour than money. Thus the notion of profit making is seen as useful within the boundaries of this research study (Hartley, 1993; Donaldson, 1993; Solomon, 1993; Mason, *et al*, 1995).

A wide number of authors have recognised the lateness of action when businesses are confronted with ethical quandary. Businesses tend not to consider the ethical or moral ground before making decisions. Even when faced with mounting pressure and the realisation that harm has resulted from their decisions, businesses still seem to get caught in inertia. Only after significant damages to image or sales do businesses react and attempt to make amends. For this research study it will be useful to consider this tendency to act late outside the domain of a profit making business. Related to the idea of lateness of action within a business environment is the idea of evasion or ethical indifference, where businesses directly seek to evade ethical dilemma (Hartley, 1993; Donaldson, 1993; Solomon, 1993; Mason, *et al*, 1995).

To counter the above ideas many authors highlight the need for business responsibility. It seems reasonable that ethical responsibility should begin at the very top levels within a business and should permeate down, so it is important for high levels of management, especially the executive, to set the standards for others to follow (Donaldson, 1992; Mason, *et al*, 1995; Solomon, 1993).

Business Ethics and Stakeholder Analysis: if you accept the idea that businesses cannot be solely governed by a profit motive, that they have multiple values and goals and should accept responsibility for their role in society and communities, then a way of considering other interested parties is needed. The idea of stakeholder analysis has been ventured as a possible tool for enabling businesses to consider all of those who are touched by their existence and operation (Donaldson 1992).

One important aspect of stakeholder analysis discovered during the business ethics literature review was the limitations of stakeholder approaches. These include the emphasis on interests and the difficulty in justifying stakeholder identification. While acknowledging the business focus of this work, it seems reasonable to include these limitations within the conceptual framework, especially given the importance of stakeholder analysis within the ethical analysis method. It also seems reasonable to consider the role of ethical principles with regard to stakeholder analysis within the domain of ethical analysis.

2.8.3 Operational ideas

Two elements taken directly from the aforementioned ethical analysis method are to be included within the conceptual framework as operational ideas. Essentially, these ideas are the mechanics of the method; they expose areas of ethical concern and enable ethical thought. While being a tool and not directly providing conceptual guidance, they are fundamental to the ethical analysis framework and thus should be included within the conceptual framework so ideas and findings that involve them can be properly judged. The two elements are Soft Systems Methodology and stakeholder

analysis. It should be noted that the role of stakeholder analysis within ethical domains has been included from an ethical basis in a number of the sections above.

2.9 Chapter Summary

This chapter has presented relevant material concerning the notion of the information society, including public access to information and communications technology. A substantial section of this chapter has considered ethical theory and analysis, including material from the business ethics area and ethical discourse from the IS discipline. The chapter also included a section that fully introduced the ideas of Soft Systems Methodology and Stakeholder Analysis, thus expanding the material presented in Chapter 1. This also provides legitimacy to their use within this study. From these sections, a conceptual framework proper has been developed and presented. Thus far, this thesis has defined and examined an area of concern. It has identified a number of important areas for further explanation, which have been examined in some detail, concluding in a valid conceptual framework. Before the fieldwork part of the study is presented, the research approach is detailed, taking into account the ideas from the preceding chapters. The research approach will be guided by the area of concern, the identified aims and objectives, the conceptual framework, and the nature of the subject matter.

Chapter 3

The Research Approach

“social theories, and the methods that can be located within them, are human products, with an intuitional history and micro-politics of their own. Theory can sometimes look as if it has a life independent of human agency, with the objective hardness of a *thing*. social theory, if perceived to be the creation of particular human individuals, struggling to generate their own visions of the social world is in fact more fluid and should be used and shaped by practising researchers, rather than mechanically determining their actions.” (Filmer *et al* 1998).

This chapter of the thesis details the selection of a research method to address the area of concern. The chapter begins with a short research summary thus far; followed by a review of relevant IS research methods; a discourse on IS research topics follows; the next section draws from the above and presents the selection of a research method and the definition of the research protocol.

3.1 Research Summary

This research study began by examining the role of ethics within the information systems discipline and focused on the use of ethical analysis through prior conceptual work. A conceptual framework and an ethics-based analysis framework were defined and will be used to explore a situation with potential ethical consequences. This situation is the introduction of ICT into physical communities. It is against this background that the available research methods will be considered. The level of access gained to the research subject is also important for the following discussions concerning the choice of research method. This is because different research methods require different levels of access. The level of access can also make available

opportunities that can affect the choice of research method. For this research study the level of access gained to the situation allowed or required a certain amount of intervention by the researcher. This limited amount of intervention was not sufficient for wholesale changes within the situation; however, it did allow the researcher to learn from within the research subject.

3.2 IS Research Methods and Practice

Presented below is a review of the main research methods used to study issues relating to the field of information systems. This is followed by a presentation of general issues, ideas and theories pertaining to such research.

3.2.1 Laboratory and Field Experiments

Experimental research techniques attempt to acquire causal relationships from either natural (field) or artificial (laboratory) settings; “The value of field experimentation to MIS research is that it enables the development of causal models...” (Zmud *et al* 1989). Thus, the form of knowledge gained from experimentation is scientific, based on empirical evidence. Benbasat (1989), drawing from Stone, states that laboratory experiments are characterized by: the artificial setting of the research, created by the researcher; subjects being treated to controlled conditions; manipulation of one or more independent variables; and that the experimenter has control over the independent and intervening variables that affect the dependant variables. Thus, the most appropriate use of experimentation methods is in the testing of theory as shown by Galliers (1991). Experimental research approaches can have strong internal validity but they generally lack external validity; they lack realism. To conclude, laboratory experiments can contribute knowledge to the IS discipline but they may not be appropriate for research where the situation cannot be easily controlled.

3.2.2 Survey Research

Surveys can be used to sample populations of different groups, survey research is broad but lacks depth. Galliers (1991) describes surveys as “Essentially ‘snapshots’ of practices, situations or views at a particular point in time.” (Galliers *ibid*). Although Galliers (1991) states that surveys provide accurate descriptions of real world situations and states that generalisation is possible he also states that little insight is gained. While Kraemer and Dutton (1991) state that survey research has played a major role in the study of information technology and that surveys can provide descriptive information capable of being anchored in theory, they concede that survey research seeks a different form of knowledge from a different mode of inquiry than qualitative research.

3.2.3 Case Study

Galliers (1991) considers case studies as a “means of describing the relationships that exist in a particular situation - usually in a single organisation”. Further he contends that case study research falls into an empirical/scientific category, a view shared by Benbasat (1989) and Yin (1994). However, Walsham (1993) favours an interpretative form of case study research that is not based on positive notions of ontology and epistemology but views reality as socially constructed, requiring interpretation of meaning. “Our theories concerning reality are viewed as ways of making sense of the world and shared meanings are a form of intersubjectivity rather than objectivity.” Walsham (*ibid*). Yin (1994) describes three different types of case study: exploratory; descriptive; and explanatory. The main advantage of case studies is that they are conducted within the context of the phenomenon under study and thus yield greater

detail about the subject. However, some would argue that generalising from such in-depth contextual research is difficult. (Galliers 1991).

3.2.4 Action Research

Action research methods are where researchers “engage with participants in a collaborative process of critical inquiry into problems of social practice in a learning context.” (Argyris *et al* in Jonsson 1990). “The term action research now defines, for all practical purposes, a class of social enquiry methods.” (Baskerville and Wood-Harper 1997). Baskerville and Wood-Harper (1997) suggest that there is more than one form of action research and that the different forms have different models, structures and sets of goals, but action research has a boundary that includes: its multivariate setting; its highly interpretative assumptions about observation; intervention by the researcher; participant observation and the study of change in the social setting. Further, Baskerville and Wood-Harper (1997) identify four characteristics that can be used to compare different forms of action research. These are:

- Process model: iterative, reflective or linear
- Structure: rigorous or fluid
- Typical researcher involvement: collaborative, facilitative or expert
- Primary goals: system design, scientific knowledge or training

3.2.5 Action Case

Developed through research experience, specifically noting the importance of both theory and practice within IS research, the action case method considers “the

construction and use of technical artefacts... in an organisational context to support purposeful activity, ” to “explore the middle kingdom of information systems research.” (Vidgen & Braa 1997). While acknowledging the main locus of information systems research as being the organisational laboratory, Braa and Vidgen suggest that the action case method is suitable for any in-context IS-based research, including research-based within homes, schools and local communities. (Braa & Vidgen 1999)

The method rests upon a framework taking the above purified research methods as ideal types that delimit a research space. Action case exists as a domain within this space and includes elements of intervention, interpretation and, to a lesser degree, scientific rigour. Tensions between these points mirror the tensions that a researcher faces when choosing an appropriate research method, as illustrated in Figure 3. By providing the research space model researchers can explore these tensions while designing their particular research approach. Vidgen and Braa (1997) also suggest the use of the model for research management purposes.

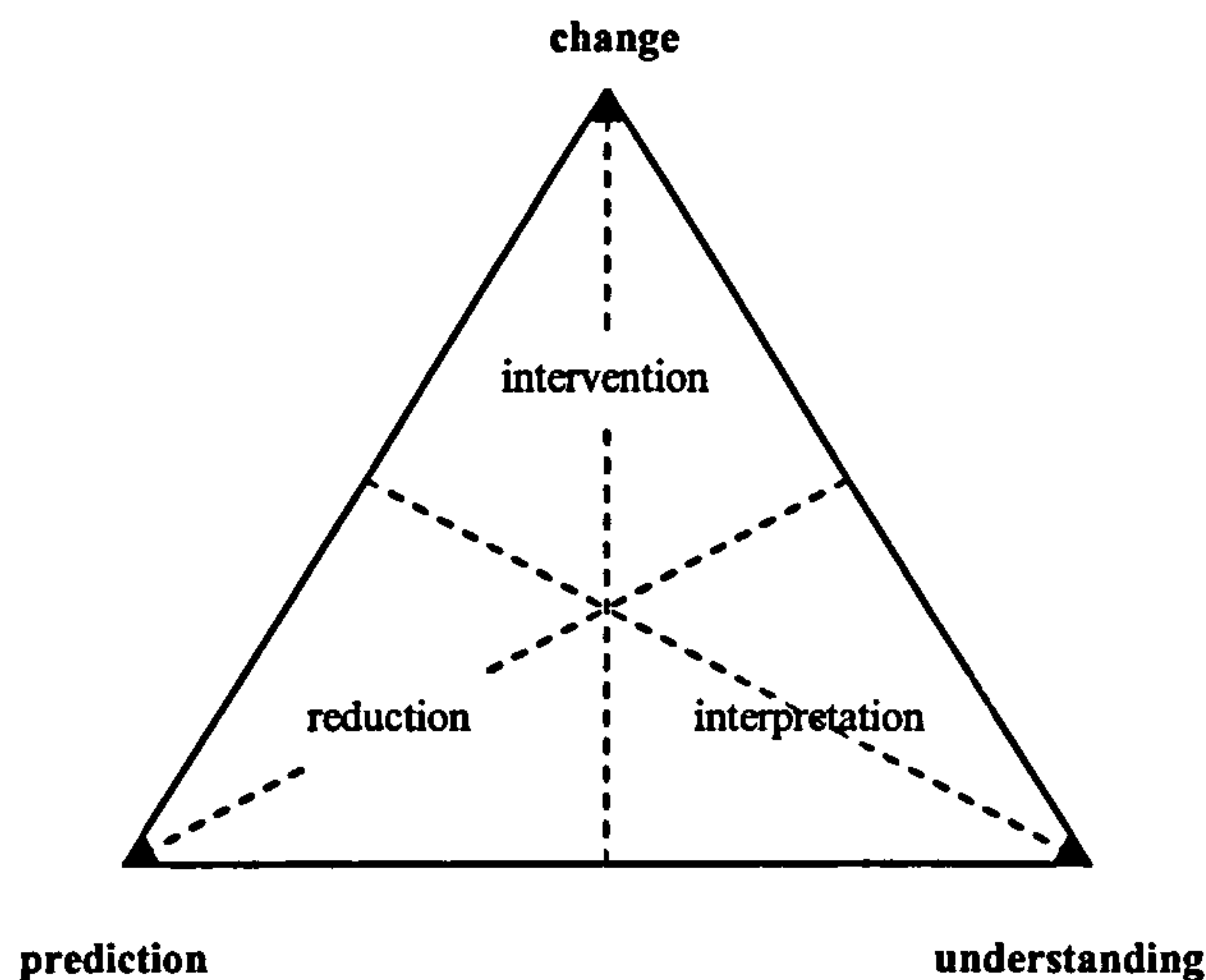


Figure 3 Action Case Research Space

3.3 *IS Research Discourse*

The above passages represent a selection of the available research methods for conducting information systems research. Throughout the lifetime of the IS discipline, and other related disciplines such as social research (Seale 1998), there have been numerous attempts and continuing debate about the validity or appropriateness of each method or class of methods. There have also been numerous attempts to position each of the methods within various models or diagrammatical spaces in an attempt to explain differences and similarities, and to provide a means of selection.

Often these arguments seem to be ‘self-justifying’ as they argue for an approach using the assumptions and ideas of that approach to justify it (Morgan 1983; Fitzgerald & Howcroft 1998), a view shared by Kraemer and Dutton (1991) when they state, “we

believe it is pointless to debate the relative sophistication of survey and qualitative research when the process of discovering and validating theories differs so dramatically across these two logics of inquiry.”

When the scientific method or paradigm is referred to, it should be noted that there are competing theories within the domain, the competing philosophies of science. The empiricists view is that science is based upon observation or repeated observations to validate theories or experimentation. To this the idea of inductive techniques was added, where theories grew by moving from the specific to the general. Experiments and repeatable observations were used through induction to create grand theories. Karl Popper rejected inductive empirical values based upon the fact that we can never know all of the possible observations, past, present and future, and that theories must exist before observation. Popper concluded that science advances by replacing existing discredited theories with newer more complete ones, a process of refutation. The differences between empiricism and the science advocated by Popper can be explained by considering the epistemology of each idea; empiricists hold the epistemological view that the world can be observed through the senses, whereas Popper’s ideas suggest a rationalistic approach to the acquisition of knowledge whereby knowledge is gained through processes in the mind. Checkland identified three tenets of the scientific method: reduction, repeatability and refutation. (Checkland 1981,1989) Popper’s rationalism led to the creation of the hypothetico-deductive scheme, as shown in Table 4 below. (Lazar 1998).

Table 4 Hypothetico-Deductive Scheme (Popper)

Hypothetico-Deductive Scheme (Popper)	
Law	a generalization or theory which covers events and phenomena of this type
Initial Conditions	statements which describe the circumstances in which the events take place
Events to be Explained	statement describing what is to be explained

Thomas Kuhn developed a view of science, based upon competing theories; he rejected rationalistic and empirical views and instead considered a paradigmatic view of science. To him a paradigm consists of a view of the world together with the methods that are used to gain knowledge from it. Science or scientific knowledge can only advance by people operating within the same paradigm. ‘Scientific development is only possible if practitioners of a particular discipline share a whole way of working and an overall conception of what it is they are studying.’ (Lazar 1998). However, as science develops, anomalies are discovered that question the underlying tenets of the paradigm and a scientific revolution or paradigm shift is needed. After such a shift the new and old paradigms are incommensurable. Therefore knowledge is gained through a conversion process from one paradigm to the next. Some have argued that this is a relativist position or epistemology; ‘a belief that the terms ‘truth’ and ‘falsity’ have meaning only within a paradigm’ (Lazar 1998).

While Popper and Kuhn consider science or the scientific method to be based upon one idea, Paul Feyerabend rejects the idea that science can advance through one method alone and insists that diversity is needed to address all the possible facts:

“the world we want to explore is a largely unknown entity. We must, therefore, keep our options open.... Epistemological prescriptions may look splendid when compared with other epistemological prescriptions.... But who can guarantee that they are the best way to discover, not just a few isolated ‘facts’, but also some deep-lying secrets of nature?” (Feyerabend in Lazar 1998).

This idea can be characterised as being epistemological pluralism, where there is not a single way to gain knowledge of the world but multiple ways each providing a subset of knowledge

Douglas (1976) presents a continuum adapted from (Wood-Harper 1989) which places each method on an abstract line. A table also adapted from (Wood-Harper 1989) depicts a comparison between positivist science and action research, providing useful insights not only for these methods but also for others, through points of comparison.

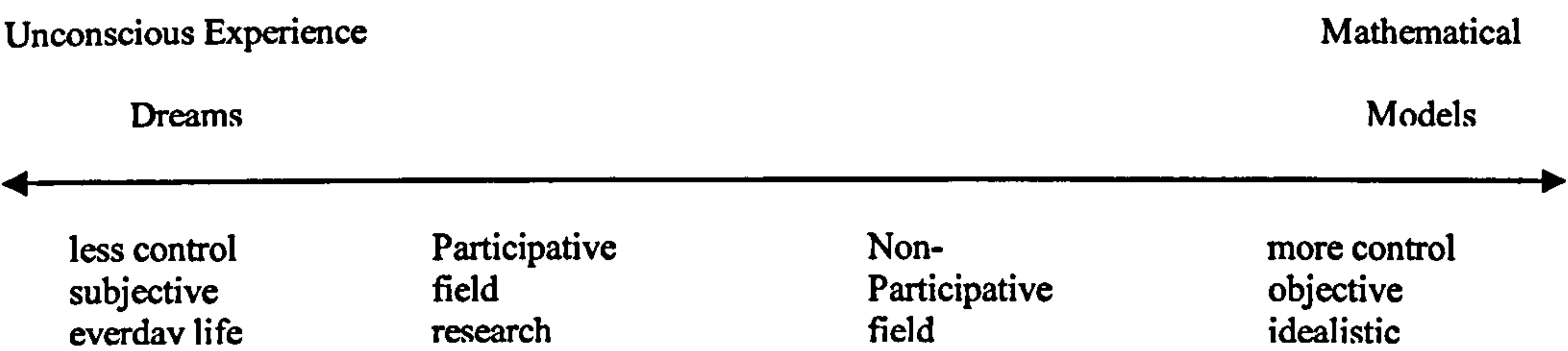


Figure 4 Research Method Continuum

Table 5 Comparison of Positivist Science and Action Research

Comparison of Positivist Science and Action Research		
Point of Comparison	Positivist Science	Action Research
Value Position	Methods are value neutral	Methods develop social systems and release human potential
Time Perspective	Observation of the present	Observation of the present plus interpretation of the present from knowledge of the past, conceptualisation of more desirable futures
Relationship with units	Detached spectator, client system members are objects of study	Client system members are self-reflective subjects with whom to collaborate
Treatment of units studied	Cases are of interest only as representations of populations	Cases can be sufficient sources of knowledge
Language for describing units	Denotative, observational	Connotative, metaphorical
Basis for assuming existence of units	Exists independently of human beings	Human artefacts for human purposes
Epistemological aims	Prediction of events from propositions arranged hierarchically	Development of guides for taking actions that produce desired outcomes
Strategy for growth of knowledge	Induction and deduction	Conjecturing, creating setting for learning and modelling of behaviour
Criteria for confirmation	Logical consistency, prediction and control	Evaluation whether actions produce intended consequences
Basis for generalisation	Broad universal and free of context	Narrow, situational, and bound by context

Fitzgerald and Howcroft consider the debate between positivist and interpretive research to be based upon polarisation and identify a number of dichotomies that are split between the ‘hard’ and ‘soft’ approaches to IS research. They then classify the dichotomies into four levels, shown in Table 6.

Table 6 IS Research Dichotomies

IS Research Dichotomies	
Soft	Hard
Ontological Level	
Relativist	Realist
Epistemological Level	
Interpretivist	Positivist
Subjectivist	Objectivist
Etic/Insider/Subjective	Etic/Outsider/Objective
Methodological Level	
Qualitative	Quantitative
Exploratory	Confirmatory
Induction	Deduction
Field	Laboratory
Idiographic	Nomothetic
Axiological Level	
Relevance	Rigour

Four approaches to bridge the gap between ‘hard’ and ‘soft’ IS research practice or to solve the debate have been identified by Fitzgerald & Howcroft. They are:

- Supremacy is the idea that one method (or class of methods) can be identified and justified as being the sole research method for all circumstances and all IS research. If this were possible the adoption of the approach would lead to great advances in the IS field and would remove the problems of research method selection, validation and problems associated with peer acceptance. However, if it were possible it would most probably have been achieved and the debate would be silent. This is not the case and the IS field is littered with research papers endlessly debating the dichotomies presented above. Another indicator of the absence of a supreme IS research method is the number of unsatisfactory explanations or unanswered questions that abound the field. (Fitzgerald & Howcroft 1998). The supremacy approach also removes variety

as an aid to creativity and thus may lead to a diminished IS research field. “given the dialectical nature of things we all need our opponents.” (Geertz, 1980, from Jones undated).

- Isolationism as an approach views each research method (or at least methods that ontologically or epistemologically differ) as mutually exclusive. The approach leads to paradigm closure and is seen to be very limiting, where research is conducted with blinkers preventing contamination from other research approaches.
- Integration seeks to combine the methods at a higher philosophical level to achieve metaparadigmatic transcendence. While the approach would lead to the same elusive benefits as the supremacist approach, integration is seen as difficult to achieve in practice. In order to integrate the different research approaches a model would need to be created that could hold each method together (co-existence) and allow for cross communication. Such a model may already exist, and the current debate may be fuelled by incomplete knowledge of research characteristics. In such a case the model would perhaps only need to be identified or discovered through intuition, a naturalistic philosophical approach. Such attempts to escape paradigmatic differences between method often fall on the sword that they attempt to avoid; they do not escape the underlying paradigmatic divisions and researchers tend to return to their assumptions (Jones *ibid*).
- Pluralism is seen as the approach with the least amount of problems. The approach accepts that different methods offer different visions of the research subject and that rather than isolate them researchers should combine approaches to gain a fuller picture. For example, interpretative research may

be conducted at the beginning of a study to explore the domain, and this would perhaps be followed by a more positivistic method for confirmatory completeness. Triangulation is often associated with the pluralist approach; for example, case study research may be combined with survey research to confirm the case study findings. One isolationist argument against triangulation is that each of the methods provides different or philosophically incompatible data and thus the results cannot be brought together to add validity to the findings. Morgan suggests that research findings should be considered or validated as they stand and that there is little point in trying to make something which is true truer (Morgan 1983; Jones *ibid*). Other problems associated with pluralism include the limited amount of guidance provided for researchers by its advocates, leading to anarchic use of the approach.

Jones, following Watson, identifies four types of pluralism and considers each to 'classify' the different pluralist positions with IS and organisational research. (Jones *ibid*; Watson 1990) Firstly, 'perspectival' pluralist would consider individuals to possess different views of the world, different perspectives, consequently researchers would be free to choose whatever paradigm or research approach they wished. However, while this may lead to innovation through variety of approach it could or would lead to an anarchic research domain and a fragmented research discipline. Secondly, hypotheses pluralism suggests that there is one reality but many opinions of it are possible, and further, that as incompatibilities are removed as the truth was found one view would emerge. This would lead to a 'horses for courses'

approach to research paradigm/method selection, contingent on the research question or aims. This “often carries the assumption that research questions have an intrinsic character for which certain methods are best suited” (Jones *ibid*). Next, methodological pluralists suggest that different research approaches yield only “a partial access to a complex reality”, resulting in the use of a mixture of methods that carries the problem of paradigmatic or philosophical inconsistencies. (Jones *ibid*), Finally, archic pluralism suggests that each approach/method is equal but different; they act in isolation of each other but may return results that although incommensurable may be compatible on other levels. The dialogical or dialectical differences may not be a disadvantage but could prove to be useful; “an engagement [with other paradigms/methods] can also provide a useful abrasive on which to sharpen one’s blade” (Willmott in Jones *ibid*). In other words, the differences and debate between research paradigms/methods can be used to consider the position taken.

While considering their research experiences Richard Vidgen and Kristian Braa considered a third dimension to the positive/interpretation dilemma; intervention. They suggest that a researcher would knowingly or unknowingly intervene (to a lesser or greater degree) in any research study using either a positivistic or interpretivistic stance. Using this new dimension they constructed a research space model to accommodate all the relevant dimensions for IS research. A description of the research space model together with a diagram (Figure 3) was included as part of the action case method description above. The diagram below (Figure 5) depicts each of the ideal type methods as placed within this research space model. Using the tensions

that the research space model surfaced and further characteristics of the research methods Braa & Vidgen present a useful table (Table 7) that addresses the problems associated with research method selection.

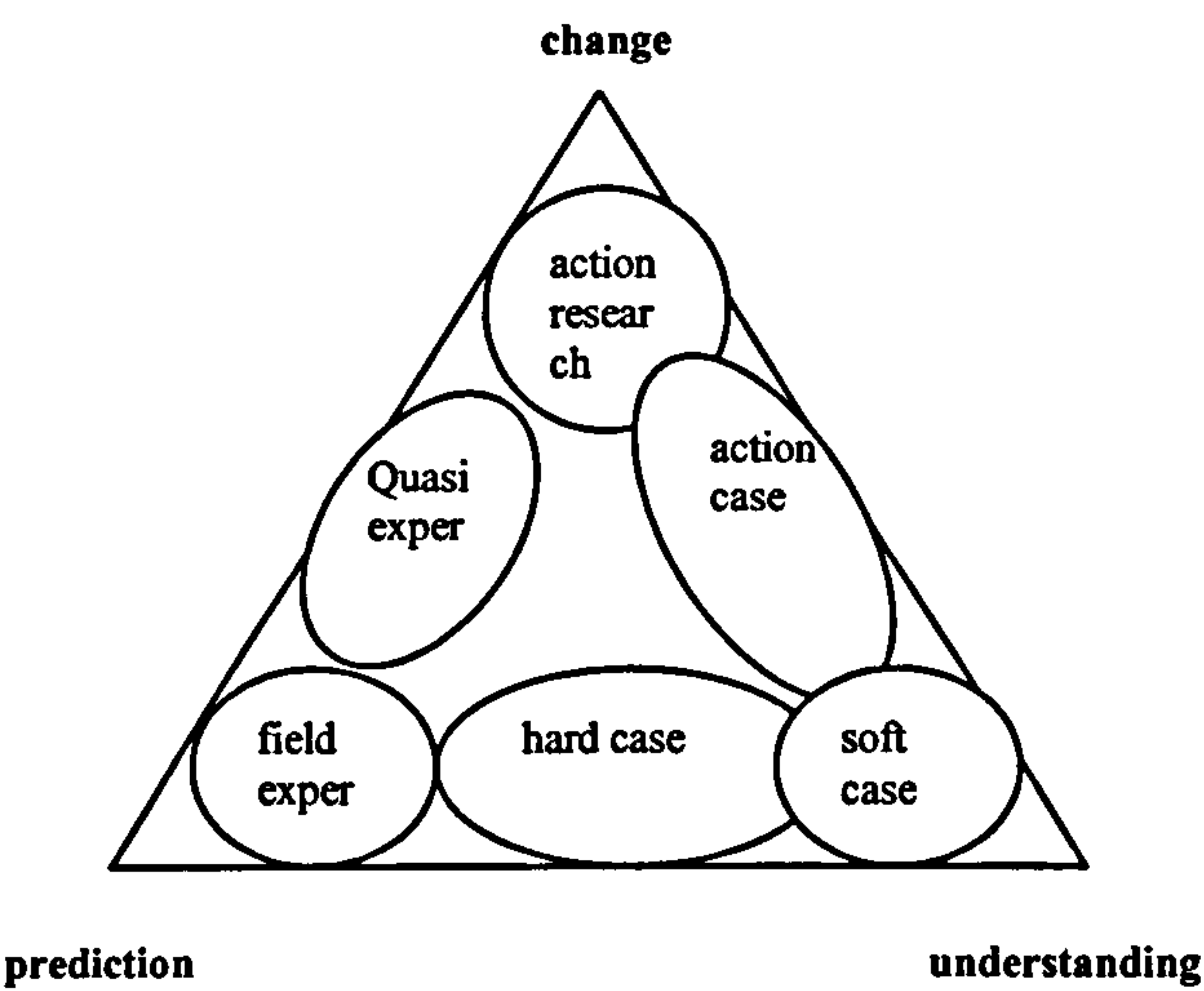


Figure 5 Research Space Model

Table 7 Research Method Comparisons

		Research Method					
		Hard case study	Soft case study	Action research	Action case	Field experiments	Quasi-field experiments
Research outcome	Change (intervention)	Unintended	Unintended	Intended, large scale	Intended, small to medium scale	Intended, small scale	Intended, small scale
	Prediction (reduction)	Medium	Low	Low	Low	High	Medium
	Understanding (interpretation)	Medium	High	Low to medium	Medium	Low	Low to medium
Research characteristics	Duration	Any	Any	Long	Short to medium	Short	Medium
	Time orientation	Contemporary	Historic and contemporary	Building future	Contemporary and building future	Contemporary	Contemporary and building future
	Participation	Low	Low	High	Medium	High	Medium

Morgan (1983) suggests the need to accept the uncertainty of knowledge and the plurality and validity of knowledge that comes from a plurality of research strategies. While each approach is valid, researchers tend to favour one approach, and this can lead to researchers becoming trapped by their own assumptions of the research subject, their philosophical (ontological and epistemological) approach. This idea is captured by Mitroff and Linstone when they state “... the prior model one has of the world determines subsequently the data one takes from it.” (Mitroff & Linstone 1993)

This weakness can be overcome by surfacing and challenging assumptions about reality, the mode of learning. (Mitroff & Linstone 1993, Morgan 1983). Each research approach provides us with differing views of the subject and provides us with different forms of valid knowledge. Researchers must be aware of what kind of knowledge is being sought and which approach provides that form of knowledge. Therefore, to select an approach one must attempt to uncover underlying assumptions (surface and challenge), define the form of knowledge sought, and finally select the favoured approach.

3.3.1 Other Discourse

“The term ‘generalization’ refers to the usefulness of a theoretical construct outside its limited domain of known observations.” (Baskerville 1996). Generalization is important for IS research in order to assist practitioners and follow-on researchers to benefit from any findings. Many idiographic IS researchers concede that their research does not meet positivist generalization criteria. (Baskerville 1996).

Idiographic research requires a different form of generalization that coexists with interpretation. Checkland (1991) states that emphasis on reflection, the use of an explicit methodological framework and the formulation of research lessons, can produce coherent and transferable research findings. While Morgan (1983, 1993) suggests that social researchers should look toward ‘generalizable insights’ that are relevant to the situation, such insights may be revealed through metaphor. Morgan (1993) argues for the generalization of insights and lessons; “Significant relationships are not manifest in the content of detailed empirical evidence, but in the structure or pattern that underlies this.” (Morgan 1983). Morgan (1993) suggests the use of ‘stories’ to generate knowledge about the situation, the intervention and the research methodology. Mitroff (1983) has acknowledged the importance of ‘stories’ by stating that they are fundamentally human and insightful. The use of ‘stories’ and an emphasis on the uncovering of insights from the research area may assist others to see patterns of events or problems that exist in some way within other situations.

Keen (1991) discusses the need to improve rigour and establish relevance within IS research, most notably by presenting a checklist to improve IS research by improving relevance, rigour and impact:

- Choose your target audience of influence
- Identify the concern within the target audience that you are addressing
- Place the study in its wider intellectual context
- Explain (mainly to yourself) why you chose the methodology you are using

- What contribution are you making to; the target audience, IS research, wider research environment and rigour

Keen (1991) presents further arguments including the statements that research must be relevant to a particular audience and that rigour or science cannot create relevance. However, rigour is very important to non-positivist research, and Checkland (1991) has argued for the adoption of an explicit methodological framework to provide a rigorous alternative to positivistic research through action research.

3.4 *Choice of Research Method*

From the above descriptions of the available research methods and the discussions above, this section of the chapter presents the choice of the research used for this research study. The process begins by rejecting inappropriate methods, leaving the chosen method, which is justified (although the reasons for rejecting the others also add justification for the chosen method).

3.4.1 *Experiments - Rejected*

The research subject under investigation here was dynamic and rich; there were many different actors that could have influenced and changed the situation. The amount of control needed to conduct a successful experiment could not have been achieved within the situation and especially given the level of access that was available to the researcher. Thus, the use of experimentation as a research method was not appropriate for the research subject or the area of concern. Experimentation was further inappropriate when one considers the intention to learn about the research

subject and to study the conceptual framework in use, as experimentation does not provide results with external validity or realism.

3.4.2 Surveys - Rejected

The research in question seeks a deeper understanding of a situation through interpretation. The aims of the research study are based upon the need to explore the phenomenon to gain a deeper understanding of it, but survey research offers a broader, rather than deeper, type of research. Given these points and the way the research aims to apply the conceptual framework, in order to learn about the situation and the framework, survey research was not seen as appropriate for this study.

3.4.3 Case Study - Rejected

While case study research seems to provide a method that both suits the area of concern and the research subject, it was not chosen for the following reason. The researcher gained a degree of access to the research subject that enabled the researcher to get closer to the subject through a certain amount of intervention. While this level of intervention did not necessarily lead to changes within the research subject, the adoption of a research method that includes intervention was seen as more appropriate. In essence, the idea is to make the intervention explicit in order to properly relate research findings to the method. The adoption of an action -ased research method also allowed the researcher to learn about the conceptual framework and research subject from within the situation.

3.4.4 Action Research - Rejected

Action research is a research method that seems to suit the area of concern, the research subject and the aims of the research. There were, however, two points that made the choice of action research inappropriate for the research study. These were the level of access to the research subject, and the level of experience of the researcher. The level of access gained to the research subject allowed a certain amount of intervention, but this was not sufficient to implement large-scale changes and was therefore insufficient for the purposes of full action research. (Braa and Vidgen 1999) Action research also places a high burden on the researcher and is therefore inappropriate for novice researchers, such as this researcher.

3.4.5 Action Case - Chosen

Action case was chosen as the research method for the remainder of the research study. It was chosen as it allows for an interpretative study while retaining a limited amount of intervention. The remainder of this section details the choice of research method used to explore the introduction of ICT into the physical community. This discussion draws on elements from action case method and ideas from its development to show the method's suitability to the research study.

The chosen research method to achieve the aims and objectives of the research study, as set out in Chapter 1 of this thesis is Action Case. This method was selected by considering the importance of the three elements that form the research space model as defined by Vidgen and Braa. (Vidgen & Braa 1997) In a sense this is defining the research method used here by placing it within the research space model:

- Given the value-laden nature of ethical concerns and the rich context of the research subject it was important to understand or make sense of the values, concerns and meanings of people within the research subject. Interpretation allowed this richness to be captured and was therefore of paramount importance to the research method. A discussion above considered the role of 'stories' as a mechanism for formulating knowledge. The knowledge sought from this research was in the form of insights, lessons and, importantly, questions through the use of stories, adding weight to the importance of interpretation to the research study.
- Intervention was not a primary concern for this research study. Intervention was used for the purpose of learning about the subject and was intended to lead to wholesale changes within the subject or significant outcomes. Here intervention was used to expose the subject to the researcher and to enable the researcher to learn from within.
- Scientific Rigour, while being an important and valid research concept, was not seen as appropriate for this piece of research. Vidgen and Braa (1997) discuss how scientific rigour can be used within interpretative research by controlling or limiting the number of variables that are considered. However, the researcher was not able to apply this form of scientific rigour to the research subject. This was due to the level of access available and the complex nature of the research subject.

Figure 6 depicts the space that the proposed research method occupies within the research space model. It should be noted that while there was an explicit acknowledgement of probable intervention during the research study, the proposed method was closer to the soft case area than the action research area of the research space, as defined by Vidgen and Braa. (Braa & Vidgen 1999).

In summary, action case was chosen as the most appropriate research method after careful consideration of the following aspects of the research study:

- The area of concern
- The research subject
- The level of access gained to the research subject
- The intention to explore the subject using and learning about a conceptual model, together with the aims and objectives of the study
- The experience of the researcher

The method and the underlying reasons for its choice are consistent across ontological, epistemological and methodological levels. (Fitzgerald & Howcroft 1998).

3.5 *Research Protocol*

While this research was action-based, rather than adhering to the full rigours of action research, two protocols or processes for action research informed the operation of the research, and these are presented in the table below. They were chosen because they emphasise learning and reflection during action within a given situation.

Table 8 Action-Based Research Protocols

Checkland (1991) A process for action research	Morgan (1993) Action learning protocol
1. Enter the Problem Situation	1. ‘Get inside’
2. Establish Roles	2. Adopt the role of learner
3. Declare M, F	3. ‘Map the terrain’
4. Take Part in Change Process	4. Identify key themes and interpretations (to produce an evolving ‘reading’ of the situation)
5. Rethink 2,3,4 (cycle)	5. Confirm, refute and reformulate throughout
6. Exit	
7. Reflect	

These protocols guided and informed the research engagement and assisted in the development of the protocol for it. The protocol is detailed below, the outline was adapted from the four characteristics of action research as identified by Baskerville and Wood-Harper (1997). Bold type represents characteristics as identified by Baskerville and Wood-Harper.

A **linear process model** was chosen, with four stages: enter, engage, disengage and reflect. The manner of disengagement was time-based, as advocated by Jonsson (1990) for action research projects. This research project was under certain constraints, requiring a **rigid structure** for the process model. In common with the notion that learning about the introduction of ICT into the physical community is important, the **main role of the researcher** was that of **learner**. However, the research also acted as a **catalyst** by raising awareness of the ethical issues involved in the introduction of ICT into Little Hulton, the research subject. The researcher adopted these roles while acting as an assistant to members of Salford City Council, and during the fulfilment a number of duties including:

- Providing theoretical knowledge, insights and opinions
- Being an active member in committees and groups including the Little Hulton Information Development Organisation

This was supplemented by the interviewing of key actors (including members of Salford City Council) within the research subject. Further interviews were needed as the situation opened and other actors became prominent. The **primary goal** of the research study was to learn about the introduction of ICT into physical communities through the conceptual framework for ethical analysis.

3.5.1 Framework, Methodology and Area Definition

As stated in Chapter 1 of this thesis, one of the criticisms of previous or ongoing research into information society issues is the emphasis given to the technological aspects of the phenomenon. This research study took a broader stance, taking its core ideas information society and ethical discourses together with operational ideas from Soft Systems Methodology and Stakeholder Analysis. These ideas, described in Chapter 2 of this thesis, allowed for an exploration of the area and formed the foundation of the **framework** of ideas through a unified conceptual framework. Each of the elements within the conceptual framework have previously been examined and their importance and relevance to the research study discussed. The use of any theories or notions guided and informed the exploration of the research subject. Ethical ideas and theories were not applied to the subject, as this was seen as inappropriate given the philosophical approach and ethical stance taken.

The **methodology** used for taking action in the situation was the exploration of the subject area guided by the protocols above and the action case methodology. The researcher became involved in various groups and committees and used interviews where appropriate.

The **area** (of concern) was the introduction of ICT into the physical community. The research subject within this area was the Little Hulton intervention within the GEMISIS 2000 project, as detailed in Appendix A. While this was the main area for research in theoretical sense the area also included the role of ethical analysis within the IS discipline.

Morgan (1983) has argued for more reflective research within the social realm. He suggests that researchers should look beyond techniques and observe and question what they are doing and why they are doing it “and thus make informed choices about the means and consequences of their research.” Checkland (1991) also argues for reflective research, as detailed in a process for action research, to yield findings about the research Framework, Methodology, and Area, and moreover it is the explicit adoption of the methodological framework that assists in the justification of the research findings. In short, reflection was used to continually question the research approach and research process to ensure that it is always present at hand. (Polanyi 1966) This was followed by taking the research findings and re-engaging with the literature to place or ground the findings within a body of work. The results from this stage of the research process can be found within Chapter 5 of this thesis.

3.6 Research Management

The defined research protocols assisted in the management of the research process and the research space model. (Vidgen and Braa 1997) They helped to monitor and control the research study. Figure 6 depicts the action case research space with an area depicting this proposed research studies position within this space. As stated above, the space straddles the soft case and action case areas. The level of intervention was constrained by the access gained to the situation and the researcher’s experience; thus, the proposed area does not approach the area defined to be action research. Chapter 5 of this thesis uses the same modelling technique to explain how events during the fieldwork part of the study affected the research process.

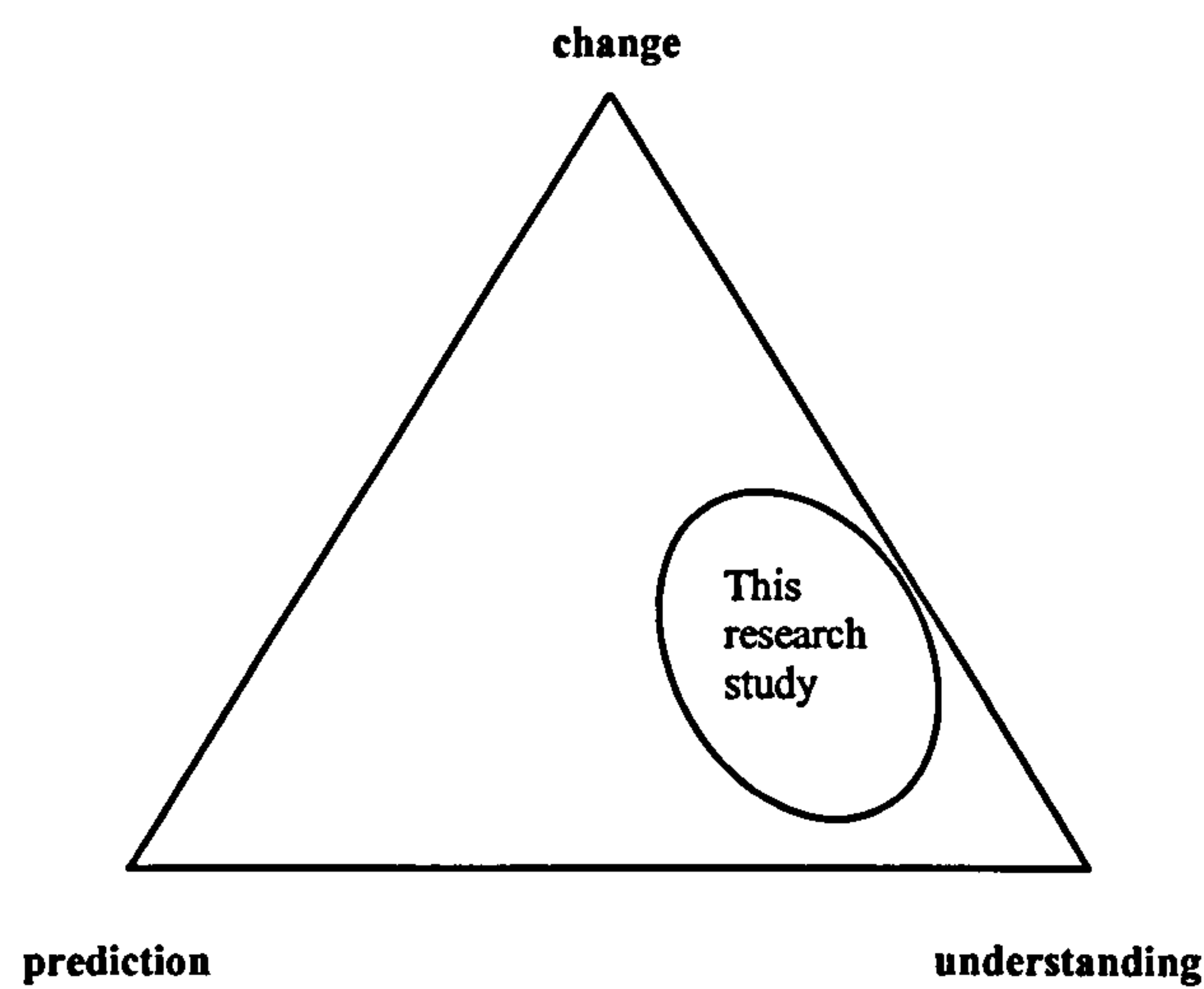


Figure 6 This Research Study Within the Research Space Model

3.7 Chapter Summary

To summarise, this chapter has detailed the research approach used to expose the area of concern to the researcher. Importantly, this was achieved through the conceptual

and ethical analysis frameworks as detailed in the preceding chapter. To begin with, a summary of research methods and research practice within the IS discipline was presented. From this and a theoretical discussion, an approach was chosen and detailed. The mechanics of the methodology were then expressed; this constitutes the research protocol and includes the monitoring and control aspects of the research approach. The next chapter applies the conceptual frameworks, using the research approach, to a chosen research subject, and thus the fieldwork is presented.

Chapter 4

Little Hulton – Action Case Study

4.1 Introduction

In previous chapters of this thesis an area of concern has been identified and described, namely the introduction of ICT into physical communities. A consistent conceptual framework has been presented to explore the area of concern and to expose this area to the researcher, this is complimented by an ethics-based analysis framework used to understand the ethical quandary within the research subject. Available research methods have been explored and the Action Case method has been chosen, together with research and management protocols. This chapter details the fieldwork part of the study and includes analysis of each element.

The fieldwork is presented in two sections; section one details the elements and issues that arose directly from the researcher's interaction with the research subject, and includes a number of important research events, which are also considered. It begins by explaining the researcher's entrance to the subject and is followed by an initial reading, or mapping, of the situation, which is in accordance with the research protocol that begins by "mapping the terrain". (Morgan 1986) This section provides important background detail of the situation, depicting the richness involved. Moreover, this part of the study meets one of the aims of the study- to explore the introduction of ICT into physical communities. The issues presented here were exposed to the researcher while acting within the situation; the fieldwork was conducted from within the research subject. The researcher encountered a number of events within the action case study that caused changes to the research process and led

to the closure of the fieldwork. These events and the reasons for the cessation of the fieldwork are presented toward the end of the first section.

Section two describes three episodes or scenarios where the ethical analysis conceptual framework was used to consider specific issues. The inception of the scenarios arose from discussions, interviews and meetings conducted while exploring the situation, detailed in section one. After the initial issues had been identified as suitable for use with the conceptual framework, further follow-up work was conducted to implement the framework. This included further interviewing and interaction with relevant research actors to produce the final models and analysis.

The three scenarios presented here are:

- Health – Initial Scenario
- Planning Decision Scenario
- ‘Security’ Scenario

A short summary of the fieldwork concludes the chapter, in which an attempt is made to find common ground between the two sections to present the two sections as a cohesive whole.

Section one – The Research Subject

4.2 Entrance to the Subject

As detailed in Chapter 1, the area of concern during the conceptual part of the study the researcher became aware of the increasing use of ICT within the physical community. The fieldwork part of the study began with a search for an opportunity to explore this phenomenon using the ethics-based conceptual framework.

An opportunity concerning a community development initiative running within the GEMISIS 2000 project was discussed with colleagues and others. Resulting from these discussions, the researcher attended a meeting with personnel from Salford City Council. This meeting was held to allow members of the corporate policy unit, the group from within Salford City Council dealing with the community initiative, to make use of GEMISIS student projects. Although not a GEMISIS student, the researcher was able to present the ideas behind the ethical framework and its potential use within the initiative.

As a result of this and further discussions, the members of the corporate policy unit granted the researcher limited access to the subject area and further meetings were planned.

During the first planned meeting, the general nature of the research relationship was discussed and developed. The members of the corporate policy unit expressed initial and genuine interest in the potential use of ethical analysis. They saw the initiative within the community as potentially problematic from an ethical point of view. However, at this point their level of ethical awareness was somewhat limited and they

were concerned with “big” ethical questions, mainly focused on health and privacy issues. The meeting closed with the following agreed future actions:

- The researcher was to take an overall view of the initiative, from the corporate policy unit’s perspective. The members of the unit saw themselves as looking and acting from a high vantage point, looking over the whole project. It was this high level of interaction and observations that the members wished the researcher to adopt.
- The researcher was to present any observations, insights and thoughts gained from acting within the project from the position expressed above. The members also asked the researcher to make relevant contributions to meetings and discussions, to present ideas.
- The researcher agreed to pass on all subsequent findings resulting from the fieldwork, together with any relevant intermediate outcomes to the corporate policy unit.

While the members of the corporate policy unit had a passing interest in how the ethical analysis was to be conducted, their primary motivation was how it would help them in the guidance of the initiative. To this end the members were more interested in the outcomes and insights from the ethical analysis rather than the process itself.

This section now continues with a description and an interpretation of the project or the community development initiative, which is followed by a range of issues that emerged during this stage of the research study.

4.3 The Community Development Initiative

The community development initiative began simultaneously from within the GEMISIS 2000 project and from within Salford City Council. A document entitled 'The Problem and the Opportunity' was the initial impetus behind the GEMISIS 2000 Community information topic group, a group formed to investigate the use of information technology within physical communities. This document presented a view of an Information Society where there would be:

- New ways for business and organisations to operate
- New ways for people to work
- New types of community services becoming available
- Access to all kinds of information for all sectors of society

However, the document also highlighted the threat to a cohesive society caused by the exclusion of sections of the community from the new society, a society based upon information and the production and dissemination of knowledge. The need to prevent a divided society, one based on 'information rich' and 'information poor', was expressed as an important aim. This was to be achieved by integrating sections of the community, the old and the young, for example, to help prevent negative social impacts. It is the notion of developing the positive aspects of the Information Society while addressing the potential negative effects that was the initial impetus behind the researcher's interest in the subject. The document proposed a number of objectives to address the community's physical isolation and social exclusion. The careful use of information and communications technology was to be used to combat these social ills. Another potential way of integrating the community was to be the utilisation of the young and technically minded to bring technology and information to the whole

community. The main target groups were: the long term unemployed, youth, women returners and other socially excluded groups. The document advocated that the benefits or impacts of initiative should be both social and economic in nature. It was believed that improvements in the social fabric of the community could only be achieved through economic regeneration and that economic regeneration required social inclusion and quality of life improvements for the community. The two strands were considered mutually dependant.

An interview with the leader of the corporate policy unit provided a different view to the start of the project. From this point of view, there was not a formal or definitive start date to the project; the project emerged from a number of connected events, meetings, discussions and general council activity. These initial events led to further discussions with the GEMISIS team and other partners, through which the idea of an information society was explored. This ultimately led to council personnel being moved from information technology and special projects sections and into the corporate policy unit. From within this unit and continuing discussions, issues, theories, problems and opportunities of the information society were explored. From this beginning a number of disparate projects were formed to tackle the information society agenda. These first ideas included projects to address business needs, arts and leisure activities, and information delivery. Examples included the business centre and the drop-in centre or “virtual café.” The initiation of these projects brought together different people and began to make the whole idea more concrete and possible. The ideas were expressed as three or four key elements that a community may need to enter the information society. However, before the project could begin a source of funding was needed. Bids were drafted and targeted towards communities

that could attract outside investment. A European social regeneration bid was successful for the district of Little Hulton, which provided the necessary funds to realise the ideas. From this, the original thoughts and ideas were turned into practical and operational projects.

From within the corporate policy unit the project became known as the Little Hulton Community Campus (or LHCC). Throughout the researcher's contact with the unit the document describing the project was under continual development, while keeping the overall objective of developing a successful and competitive community in Little Hulton (LHCC 1996, 1997). This document was used as a consultation device to engender a debate and develop ideas for the project; however, it was not portrayed as Council policy. While the Corporate Policy Unit was charged with issues relating to the information society agenda, they did not have the power to implement projects. The main aims of the LHCC were to:

- Raise awareness of technology and the benefits of information
- Provide access to the technology together with the knowledge to use it
- Deliver content to give purpose to the newly found "awareness and access"

This was to be achieved through three essential project elements:

- Community Information
- Business Centre
- Access Centre

However, each element could be housed, be physically located, in a number of different sites throughout the community. The physical dispersal of each element throughout the community was not seen as a potential problem by either the corporate policy unit or by the other groups involved. Those involved viewed the site as a “tight geographical zone.” During one visit to the community site, a member of the corporate policy unit considered the site and remarked that a “handkerchief could be thrown over the site and touch each of the facilities.” While attending another (group) meeting a member of the corporate policy unit offered a technological solution to the dispersal of facilities. It was made clear that any information or service could be made available to any location through cabling and networks. A meeting within the community school (participants of the LIDO group) exposed other reasons for the dispersal of facilities throughout the community buildings. The group believed that by having similar services and access in a number of community facilities the potential for more people to gain access could be increased. One reason articulated for the need for different sites was that some people within the community might not feel comfortable in a library or a school environment. It was thought that some people would not enter a school but would be willing to go to a drop-in centre. The vision that was created by these incidents and subsequent discussions was of a compact and connected community, where all citizens had access to ICT. Wherever the facilities were to be housed they would all contribute to each of the project elements, which included the following:

- Information Delivery – to provide access to relevant information to improve the quality of life for all citizens of the community via suitably trained information

officers and front-of-house facilities, remote access points, work-placed or home-based workstations and through cable television and phone services.

- Business Centre – to provide a business focused centre to develop awareness, knowledge, skills and expertise in information and communications technology. The business centre was seen as income generating and as a platform for training and job creation, run by local people for local people and businesses.
- Community Wing – located within the community school, this was to allow access to education and training resources through telematics to all citizens, to improve their life style and foster community business. The Community Wing was also the base for a youth and community facility.
- Community School – to provide access to ICT and the information society to pupils and staff, to enable them to develop the necessary skills and technological knowledge. To be delivered through a network room and a further two independent facilities.
- Library – providing access for all citizens to relevant information to improve the lifestyle, through three services: a one-stop-shop, a homework club and a technological solution to the library reference services.

A pictorial representation of the LHCC project can be seen in Figure 7 and a breakdown of the facilities and potential uses is provided in Table 9. The LHCC was represented by a number of facility project managers and steering groups, including:

- Little Hulton Information Development organisation (LIDO). This group was concerned with the information requirements of the people within the community. The group also considered the method of delivery and its implementation

including installation requirements from an impact rather than technical point of view.

- **Public Information Group (PIG).** This group was an internal Salford City Council group primarily tasked with the collation and dissemination of public information, in an attempt to provide a generic public information service.
- **Co-ordination and Liaison for Information Providers (CLIP).** This group, while similar to PIG, was tasked with the collation of information from a wide range of information providers. This was a multi-agency group consisting of representations from: Salford City Council, Manchester Training, and Enterprise Council (TEC), Salford and Trafford Health Authority, Salford Community Healthcare Trust, Emergency Services and Greater Manchester Passenger Transport Executive.
- **Technical Group.** This was a specialist group providing support for the underlying technology of the project. It included technical representatives from Salford City Council, GEMISIS 2000 and cable providers (NYNEX Cable Comms and then Cable and Wireless). Additional service providers were to be added as the need arose.

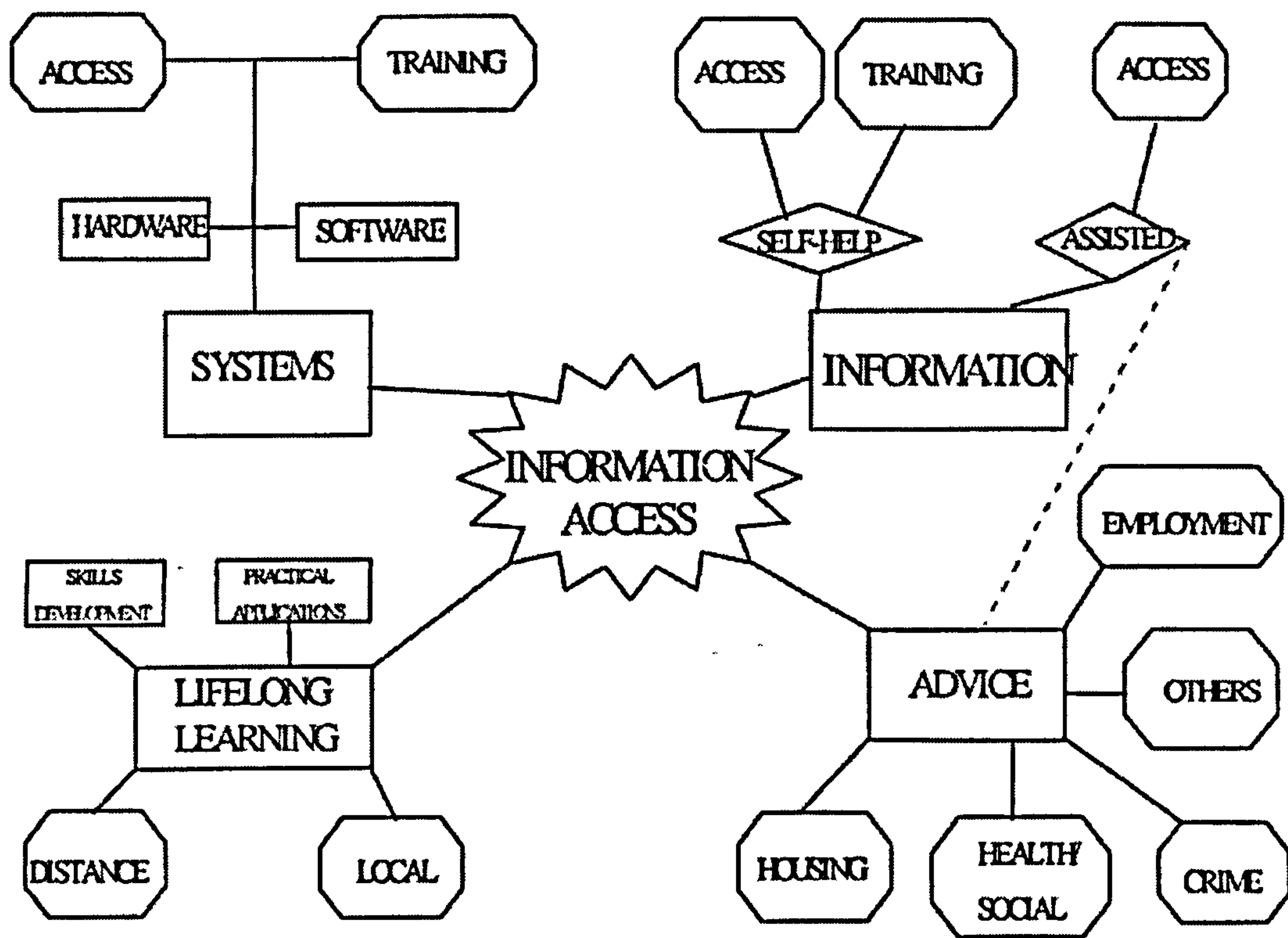


Figure 7 Little Hulton Community Campus Diagram

Table 9 Little Hulton Community Campus Facilities

Facility	Public Informa tion	Education	Access	Employment Creation
Business Centre		*	*	*
Community Wing		*	*	
School		*		
One Stop Shop	*			
Library	*	*	*	
Kiosk	*			
Medical Centre	*			
Salford College		*		
Youth & Community			*	

From this background and initial discussions, the researcher produced a first analysis of the overall situation, and this was presented to the corporate policy unit. The document allowed a discussion to be structured that allowed the researcher to formulate and grasp an initial picture of the overall situation. This also allowed the researcher and the members of the corporate policy unit to begin further studies from an agreed starting point. Outcomes from the above document and this stage of the study included a stakeholder map (Figure 8) and a top level root definition for the initiative and CATWOE models, below:

4.3.1.1 Initial Root Definition

“A community-based, City of Salford-operated, information services provision system, to enable community members to manage their lives and fulfil their potential, by providing the right information at the right time in the right place via the right delivery method and by raising awareness, providing access and content.”

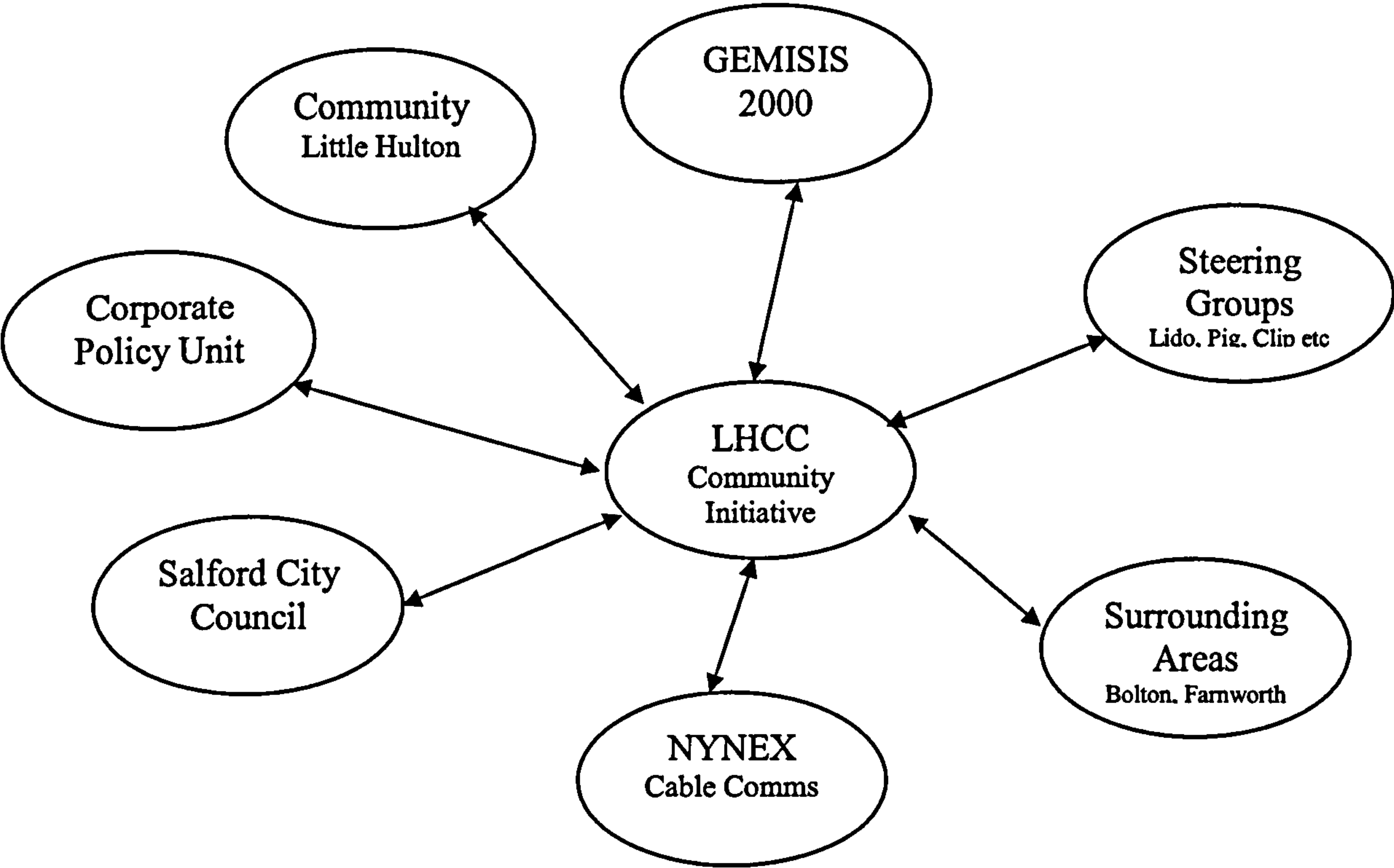


Figure 8 Initial Stakeholder Map

LHCC Initiative

- C - Members of the community of Little Hulton, and beyond
- A - The City of Salford, Community Members
- T - Members unfulfilled potential -> fulfilled potential, higher standard of life
- W - That information is fundamental to local people’s health, education, culture and leisure, and the provision of information services will enable community

members to make informed decisions

O - Community members, delivery method providers (infrastructure providers)

E - Government legislation and telematics policy

School

C - pupils, staff

A - staff

T - present exam results -> higher standard of results

W - the use of information technology will increase exam results?

O - staff, pupils

E - education system (standards, curriculum etc)

Business Centre

C - local small businesses, potential new businesses, labour force

A - business centre

T - info (tech) unaware -> info aware

W - the development of lifelong learning skills and access to business technology will result in sustained economic regeneration

O - local business people

E - external economic factors

Library

C - community members

A - library staff

T - information poor -> information rich

W - the library can provide access to information to all (including school shy?)

O - community members

E - other information providers

Community Wing

C - community members (adults)

A - community wing staff

T - community members without information or social opportunities -> community members with both access to information and social opportunities

W - access to information/technology is important in a social setting

O - community members

E - leisure activities, other interests

NYNEX

C - NYNEX Cable Comms

A - NYNEX, LIDO

T - current coverage and use of the network -> expansion of the network and its use

W - the promotion of info services assists in the expansion and use of the network

O - Little Hulton, City of Salford

E - government communications policy

The document also indicated the complexity of views and stakes stemming from the various interested parties, surfaced through the CATWOE definitions developed by the researcher. From this analysis the researcher raised two concerns with the members of the CPU, as follows:

- Firstly, there seemed to be a concentration on the provision of information and technology as opposed to concentrating on what was to be done with the information and its underlying technology.
- The second concern was based on the wide range of stakes within the community initiative. To the researcher, it seemed that the disparate groups were pulling in different directions. The researcher identified a potential problem in facilitating a common way forward, while acknowledging the individual stakes of those involved.

These concerns were discussed with members of the CPU; this, and the initial analysis, helped to forge a working research relationship with the unit. As stated earlier the analysis also helped to bring the researcher and the members of the corporate policy unit to a closer starting position.

4.4 Divergent Issues

A number of issues arose from various meetings with members of the corporate policy unit and from within the various community groups, including LIDO, that demonstrates the diversity of thought and analysis needed to confront the introduction of ICT into physical communities. These are represented by Figure 9 and are detailed in the following discourse.

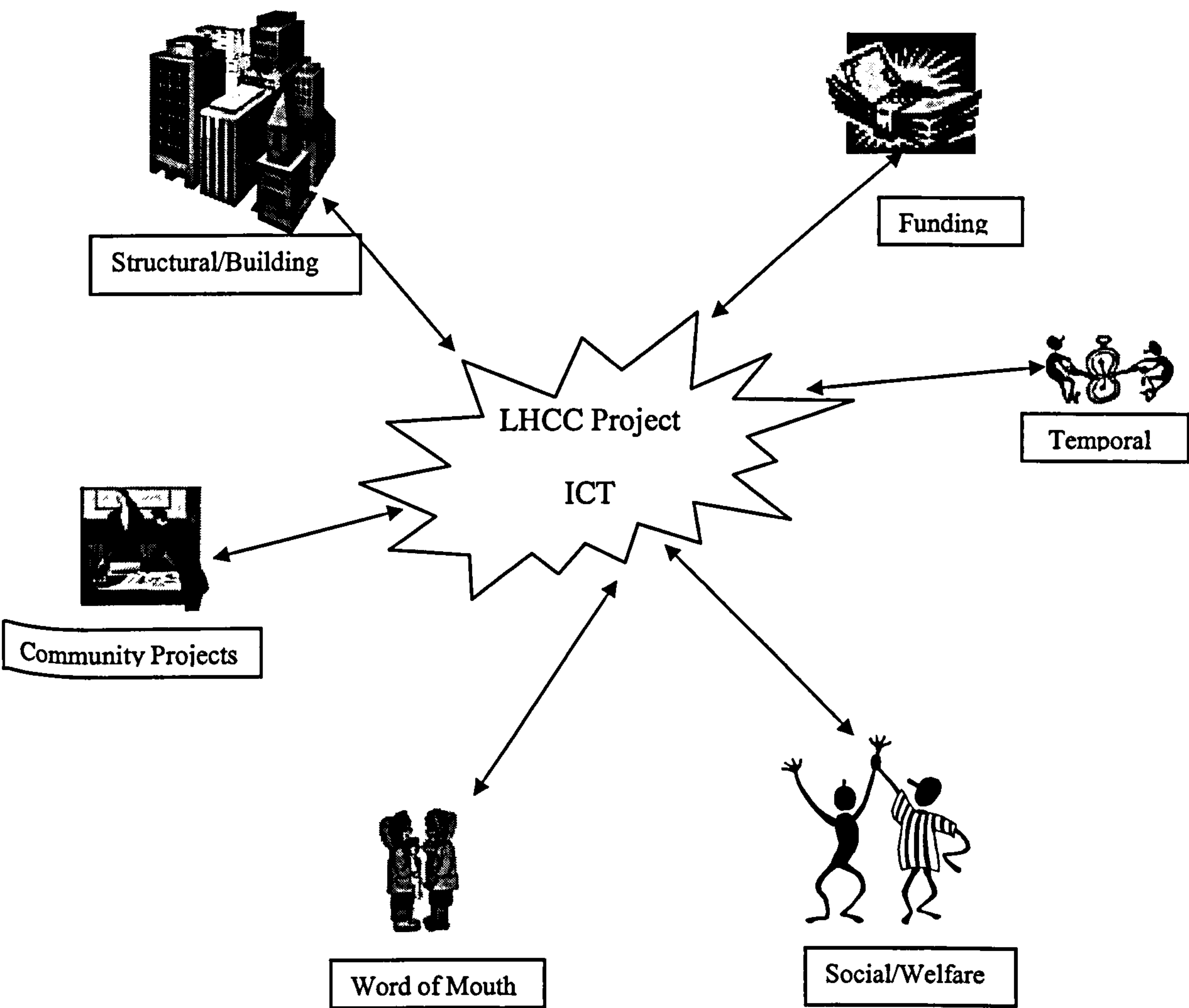


Figure 9 Little Hulton Community Campus Divergent Issues

Structural or Physical Changes

The physical and structural impact of the information technology was seen by some of the participants of LIDO to be very important, that is, the changes required to physical buildings and work structures to allow members of the community to have access to information and communications technology. During one such meeting the researcher was presented with a plan of the community school, detailing the room layout and showing available entrances and exits. Discussions followed concerning the need to alter a number of rooms to accommodate the computing facilities, including workstations and also the necessary wiring for network access and power. Other discussions dealt with keeping the equipment secure from theft while allowing access to the facilities within the school by other members of the community. This discussion was one of the seeds that led to the security scenario mentioned earlier and detailed in section two of this chapter. Once the physical layout of the rooms had been tentatively agreed, the actual use of the new technology or computing rooms was considered. Members of the school attempted to match the physical layout of the rooms to the different scholarly needs, group sizes, their activities and the school curriculum. While also considering the importance of community access, the school had community status (it was a community school) and thus community access could not be denied. An extension to the community library was another structural change to the community initiated by the introduction of ICT. This extension was to provide access to information technology to the whole community and to provide a homework club for school children. Changes to other community facilities, including the health centre, were also needed to accommodate and utilise information technology and the community campus services, partly to provide other places where people could access the information resources.

Funding

Introducing information technology into the community is an expensive exercise, and therefore monetary issues cannot be overlooked. As mentioned above, the LHCC was to be partly funded through a European social regeneration initiative but other funding was essential for the viability of the project. This additional or 'matched' funding came from a variety of sources, needing careful balancing and management. The term 'matched funding' refers to a policy that a number of the funding bodies adhered to. Funding bodies using this policy would not fund the whole of a project, or element of a project, but would provide matched funding if the bidder could find other funding from a different source. The various sources of funding included:

- The Social Regeneration Budget (further complicated by being divided into revenue and capital sections and by the inclusion of the Farnworth district)
- European Regional Development Fund
- Capital Challenge
- Local Authority
- The Private Sector
- Salford University (with its partners in the GEMISIS project)

These funding arrangements were spread across the LHCC project elements with different funds either supplying the bulk or the matched part of the funding. This was further complicated due to the different timescales and constraints attached to each fund. Some sources of funding only funded the actual ICT equipment and its installation. However, from the aforementioned discussion on structural changes that were needed to accommodate the technology it became clear that other sources would

be needed to fund the capital expenditure, changes to community buildings. An information officer was to be based within the new section of the library to provide assistance to anyone seeking information or access to information and communications technology. The information officer was seen as a vital buffer between the technology and community members who perhaps lacked the technological skills to seek the information they needed. Therefore, a source of funding was needed for the information officer. This again required a different and an ongoing source of funding. A training fund was also considered, to provide community workers and officers with the necessary skills to both use the technology as a resource and to provide assistance to community members.

Table 10 Examples of funding complexity

LHCC Project Element	Source(s) of Funding	Timescales
One Stop Shop (including the information officer & kiosks	Challenge Fund Social Regeneration Budget (3)	1998/99 1997/98, 98/99, 99/00, 20001/2002
Telematics	Capital Challenge	1999/00
Business Telematics	Social Regeneration Budget (3) European Regional Development Fund	1999/00 2000/01, 2001/2002

During discussions with the members of the corporate policy unit and others concerning funding arrangements for the information technology and social regeneration projects, a number of recurring themes emerged, as follows:

- The inclusion of information technology projects within bids was seen as a way to ensure funding for other schemes, as information technology was a “hot issue.” The participants believed that the funding agencies, including European agencies, were pro-actively looking for technological projects

and thus by including technology in bids the success rate could be improved. Examples articulated suggested that where non-technological project bids had failed, the inclusion of information technology within a subsequent resubmission could often result in the funding of the project.

- The measurement of quality by the funding agencies seemed to be numerically-based. A member of the corporate policy unit referred to this as counting “boxes and bottoms”; in other words quality was to be measured by counting the number of computer workstations and the number of people using them. These measurements also formed part of the constraints for the continued funding of the projects. This was seen as a limiting factor to the development of the project. Positive outcomes (for example, job creation) from the use of the ICT were seen as more important than just the maximisation of the number of terminals within the community.

From the discussions above and the complexity of the funding aspect, it should be no surprise that the complexity of the interlocked and overlapping bids became a source of many problems within the corporate policy unit and other agencies.

Time

The management of time was also crucial to the potential success of the LHCC intervention, partly due to the various funding bodies’ assessment criteria, as stated above. However, perhaps a more important aspect of the timing of the project was the need to keep the members of the community, whose support was vital, interested in the venture. Indeed, one of the first views expressed during the discussions with

members of the corporate policy unit, LIDO and City of Salford members was the need for a “quick win” project. This was seen as important, to keep the people of Little Hulton interested in the project as a whole and to develop ownership of the project.

When the project was first released to the local press expectations were raised among the community. The local press reported the introduction of technology and services into the community, highlighting the benefits, but did not express the amount of time and development that was needed before the services became available. Some members of the community sought the new services as portrayed by the local press and were disillusioned when they learned that such services were months, if not years, away. Therefore it was seen as absolutely essential that the people of Little Hulton became involved in the project, to foster a sense of ownership. A sense of being involved was seen as a way of creating the solutions that people wanted and to develop their commitment and long-term use of the new services. Within many of the meetings of the LHCC project groups there was a general feeling that the information society agenda was all about the future; “testing and building models for the future generations” was seen as important. However, it was also acknowledged that, “the community has problems now.” These included:

- Young people leaving school underqualified, (only 28% of pupil achieved 5 or more GCSE’s at grades A-C (1995 taken from SRB)
- Young mothers giving birth to unwanted children
- People with aspirations feeling there was no way achieving them

These were cited as (immediate) problems of the here and now, while it was considered that the information society only offered solutions for the future. Indeed one view from the corporate policy unit suggested that the information society agenda did not offer solutions but instead it posed questions, which needed time and development to answer. Further to this, the overall progress of the project was seen as too slow, with any positive outcomes from the project seemingly being too far in the distance, while the funding constraints required positive results in very short spaces of time. In order to sustain the continued funding of the project over its development lifecycle various funding bodies required positive results. The need to sustain funding and the need to keep the community's interest in the project were the two main timing considerations.

Social and Welfare

During discussions with the corporate policy unit, LHCC project groups and other parties, a number of issues or ideas emerged that were social in nature, concerning the social well-being of the community.

One of these issues, related to the structural concerns, was how to provide adults with access to the information technology within the school site while keeping the pupils, staff and school property secure. There was a need to balance the rights and concerns of one section of a community with another. The adults had a right to access to information and information technology but this had to be balanced with the rights of the school, its pupils and staff to feel and be secure, and the right of the whole community to prevent damage or theft of school property. These discussions in part led to the security scenario, presented in section two.

Community integration was seen as one of the major ills that needed to be addressed. With this in mind, many of the participants within the various groups took the view that access to information technology should be secondary to the need for social inclusion within the community. There should be opportunities for people to come together in a social setting where information technology ‘was available’ but was not the paramount concern. The vision was to provide services that use information and communications technology for social inclusion rather than social isolation. One idea that came from these discussions, was to present the drop-in centre as a place where people could drop in for a coffee and to meet people and friends, and ‘if’ they wanted to gain access to the community campus services. Another idea was to use the community wing of the school as a venue for social occasions, while also allowing access to community information services. During similar discussions on social and community welfare, a community development officer provided the group with a document that contained the rights of community members, as seen by community and council officers. A selection of these are provided below:

- All community members have a right to employment
- All community members have a right to feel and be secure
- All community members have the right to high standards of education
- All community members have a right to good health

One of the most important ideas concerning social issues was first ventured by a member of the corporate policy unit. This idea was that no matter how well the technological aspects of the project were managed and implemented, there was a need

to create a better social environment to engender a change in attitude within the community. ‘People need to feel better about themselves and where they’re living [their environment] before they become a full member of the community and take part in the information society.’ The planting of trees and painting of fences was seen as important as the laying of cables and the installation of computer workstations. The provision of better physical communication links within the community and the provision of better local shopping and services was also considered to be vital to the regeneration of the community. The changes to the community environment, the improvement of the physical links with surrounding areas, and provision of better community shopping and services were seen as vital if economic and social regeneration was to be achieved. These elements were clearly articulated within various budget and funding bid reports as the following statements, taken from Developing a successful & competitive community in Little Hulton & Farnworth (bid to Single Regeneration Budget Challenge Fund) demonstrate:)

- Physical Isolation – the area experiences physical isolation from major centres of employment, culture and higher education
- Poor Image – overall the area suffers from a poor image as a place to live work and invest
- ...the area has declining social and physical conditions
- Changing the Image – ...build homes and diversify the tenure, improve local choice and facilities [local shops and services], improve community safety

Word of Mouth

An important issue that was raised within the various community groups was the notion of information diffusion via ‘word of mouth’. It was recognised that while information technology could provide some information to some members of the community, the vast amount of information diffusion would be, for the foreseeable future, via word of mouth. With this in mind, community officers devised a number of plans to assist in the diffusion of information throughout the community. These included:

- The support of community representatives, recognising that ‘community representatives come into contact with a great many people, both on an informal basis and at public meetings, ’ to ‘help them become real live carriers of accurate information’
- The community participation network, which co-ordinates community officers and representatives. This network of community workers and officers was developed by the community information development officer to bring together disparate groups, to find ways of providing a common message, to ensure complete coverage of the community, and to make sure all those in need were reachable.

While recognising the role of ‘word of mouth’ for the diffusion of information throughout the community other methods were not dismissed, but rather, a range of delivery methods was considered including: word of mouth, press, newsletters, information technology, and community/officer networks. Information technology was not seen as a replacement for other information delivery methods but was seen as part of a co-ordinated community-based information strategy. Information

technology was, however, seen as an enabler to this co-ordinating process. Information technology was to provide central repositories of information and was also to provide communication links within the various groups, to help co-ordinate efforts.

Delivery of ICT through projects

The diffusion of information or information services within the LHCC was to be via a number of specific projects sponsored by disparate groups. It should be noted that the concentration on projects rather than technology might have enabled the LHCC to focus on the needs of the community and help avoid a technological led initiative. The focus on technology rather than the needs of the community was an initial concern of researcher but the realisation of the technology through distinct projects was an important characteristic of the initiative that helped prevent this. For example, the Business Centre objectives included:

- The production of training services and materials for advanced technology
- Community-based training programmes; support training using community members to train others- a community helping itself
- The provision of trainee jobs

While all these activities require information technology it is the business and/or a community or social objective that is the main focus behind the Business Centre aims. In other words, this was a community-focused solution that would use information technology to achieve community objectives, instead of blindly introducing technology.

4.4.1 Summary

The above discussion demonstrates that issues within the LHCC were not limited to information or information and communications technology. Issues concerning the LHCC and issues arising from the delivery of information via the various project elements stem from a broad spectrum of domains, including: information, structural, temporal, monetary and social domains.

4.5 Research Study Events

The researcher noted that there were significant changes in personnel throughout the time spent during the fieldwork part of the study. Members of particular groups, including LIDO, seemed to be in a state of constant flux, causing a number of research problems. These problems included losing contacts, leading to problems forming research relationships. It seemed that at times a fruitful research relationship would be formed, to be quickly followed by that person either moving on or being replaced. It was changes to key personnel that caused most of these difficulties, as follows.

At some point during the research study, while discussions were continuing and ethical analysis models were being drawn, the leader of the corporate policy unit announced that he was to leave the corporate policy unit and Salford City Council to retire to Spain. The researcher organised a final interview and began discussions with another member of the unit in order to sustain access. While this was successful, it was a lengthy process and the disruption caused time delays in presenting research material to the unit.

After discussing these events with a number of actors still within the situation, a view was expressed that there seemed to be a lack of vision, direction or a vacuum of ideas. Others saw this key member of the corporate policy unit as the person with the LHCC vision and the person driving the vision. He was seen as the project initiator, co-ordinator and champion.

A short time after this event the researcher lost communication with the corporate policy unit; calls were left unanswered and contact was not possible. After further investigations into this the researcher was led to believe that the member of the corporate policy unit who was the researcher's point of contact and access had been suspended from the council.

After the retirement of the key member of the project and subsequent other changes in personnel, the researcher became aware that the various groups operating within the community campus initiative, including the LIDO group, were no longer meeting or operating.

Facing these difficulties, the researcher changed the focus away from the corporate policy unit and toward other officers and agents within the community. Initial findings corresponded with the above in that there seemed to be a general lack of direction and cohesion among the community workers at this time. Some members of the various community groups were planning projects outside that of the Little Hulton Community Campus initiative. These included:

- **Healthy Living Centres** – A government initiative targeting the most deprived areas in an attempt to foster healthier lifestyles. The aim of the local implementation of this was to bring together health agencies to promote good health by encouraging healthy eating, stopping smoking and stress relief, through education, the provision of information (local language) and information technology.
- **Childcare Information Service** – A database driven service to provide a list of accredited childcare providers to ensure that parents who need to place their child with a carer can do so with confidence that their child will be safe and well cared for. This database was to be accessible from a number of locations throughout the community.
- **Little Hulton Library Telematics** – The public library consider its role within the community to be based upon information, education and leisure. In order to achieve this the library wished to move to information provision through telematics or ICT, to provide access to the “information superhighway, to improve public awareness of information technology.” The library concluded that telematics was the key to its ongoing development.
- **Salford (Social and Health) Care Information Line** – This was a joint venture with a number of local and regional healthcare authorities and agencies. Information was to be collated from a wide range of healthcare providers, ranging from NHS hospital trusts and social services to private and voluntary nursing homes. Such information was to be delivered through touch screens, which would be available to staff at designated areas and primarily through (free) telephone lines.

The researcher arranged a meeting with a community health information worker based within a local library. At this meeting a number of projects were mentioned that were progressing outside of any strategic initiative. These included, as noted above, the childcare information service and a Salford-based social and healthcare healthcare information service to use dedicated telephone lines and information kiosks. The health worker believed that overlaps with other projects could not be avoided if an overall strategic plan could not be developed and implemented.

At this meeting an idea of how information could be targeted toward people with information needs was explored. The approach adopted by the community information officers was not based upon the blind delivery of information via all available delivery methods. Rather, if information became available that was deemed useful, the group would contact the relevant agencies and interest groups involved in that area and develop a plan to distribute the information in a more specific manner.

For example, when considering information concerning drug addiction, the group would contact drug centres and local community groups involved in drug rehabilitation and support. From these discussions the information group would ascertain the target audience of the information and then distribute that information to those who would benefit or those who could make a difference by passing on the information.

Using the drug addiction example, it may not always be useful to provide information to the addicts themselves; some information may be more useful to families and

friends of drug users. This information may provide support to families and friends of drug users and may also help them to provide support for the drug users. This idea partly led to a notion of engagement, which is discussed in the conclusion of this section and further developed in Chapter 5 (Conceptual Analysis).

After a short period of time, the researcher was able to make contact with a new potential leader of the LHCC project. A meeting was planned to discuss the researcher's access and input into the project. At this meeting only a tentative agreement was achieved, although the researcher was presented with an opportunity to attend a meeting to re-establish the project. However, no concrete access rights were granted and there seemed to be a hurdle to further study.

This meeting and the accompanying document discussed the re-establishment of the LIDO working group and a resultant community service project plan, which outlined a new direction for the community aspect of the GEMISIS and Salford City Council project.

Part of this meeting considered a "kit", or equipment audit. This audit considered the available computer equipment within the community. Also considered were the various sites for the equipment, whether or not the equipment was to be networked, and who was to have legitimate use of the equipment. However, there was only a brief discussion about how and what the equipment was to be used for. This was mainly based on the need for awareness sessions for the Internet.

There were discussions concerning a quick win or success story that mirrored the discussions earlier in the project with the corporate policy unit. In this instance, the focus was not on keeping the community's support, keeping people interested and developing ownership. Rather, it seemed to be considered as a political device to gain approval from other parties. A project that provided information via the Internet on attention deficit disorder to a women's group was recognised as a success and was to be used as the success story.

After the meeting the researcher concluded that given the time constraints of the research study, the need to re-establish access and cultivate new working relationships, there would be little time to achieve any more significant findings. With this in mind the researcher withdrew from the research domain, and the fieldwork part of the study concluded.

These events not only caused a number of difficulties for the researcher but it seems likely that they had an adverse effect on the LHCC project. The events also caused a change in the way the research study was conducted and therefore led to changes in the research method and protocol. These changes are explained by returning to the research method models and using these to depict the changes within the study (Vidgen & Braa 1997) in the next chapter of this thesis.

4.6 Section summary

This section started by describing the manner in which the researcher gained access to the research subject, then some background to the community based initiative was articulated. While working within the project, the researcher uncovered , a number of

divergent issues pertaining to the introduction of ICT into physical communities, and these were presented with further analysis and interpretation. Finally, significant events that shaped the conclusion of the fieldwork and the remainder of the research study were discussed.

Section two – Ethical Analysis

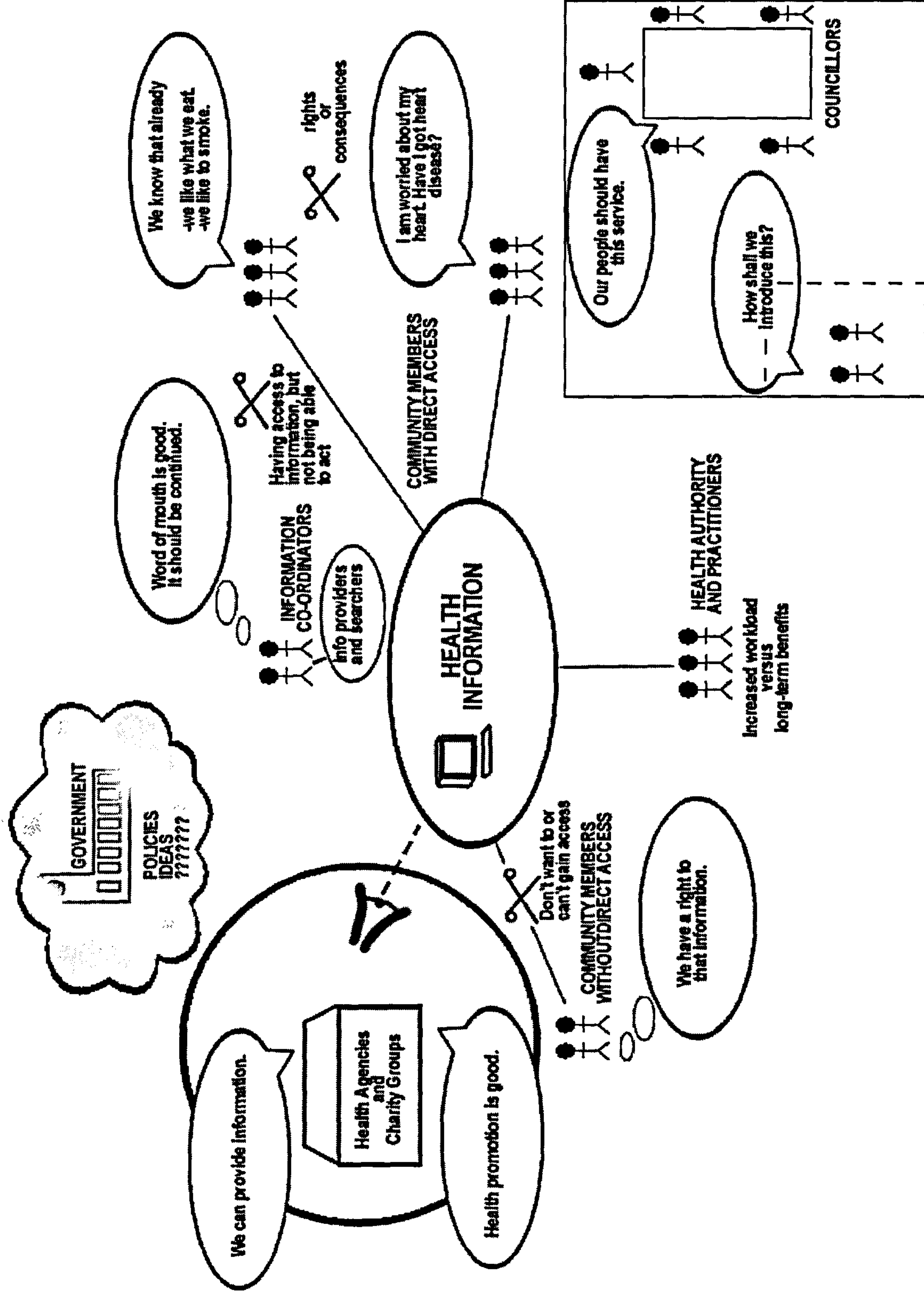
4.7 Health – The initial scenario

One of the first meetings that the researcher attended with members of the corporate policy unit away from Salford City Council was a meeting at the local area health authority. This meeting considered the application and implications of providing healthcare information to the community through information technology.

One of the members of the local health authority voiced concerns about this application of ICT. One apparent reservation concerned the publication of healthcare information to people who did not have direct contact with healthcare professionals. Another concern seemed to be the potential impacts of such information on the healthcare system. The local health authority was concerned that an increase in awareness of particular medical problems might lead to people becoming over-anxious, resulting in extra consultations, as people sought medical advice.

The researcher discussed these issues with the group and subsequently with the members of the corporate policy unit. From these discussions the researcher began an ethical analysis of the impacts of the delivery of healthcare information using the community's ICT initiative. This was an initial study used by the researcher to familiarise himself with the ethical framework and also to provide initial feedback to

the members of the corporate policy unit. Outcomes and ideas from this study were further explored during other meetings where healthcare issues were raised. The modelling and analysis below takes into account these discussions and in particular discussions from a formal council meeting that explored the role of ICT in the delivery of healthcare information. In this particular case, the method of delivery included multimedia technology.



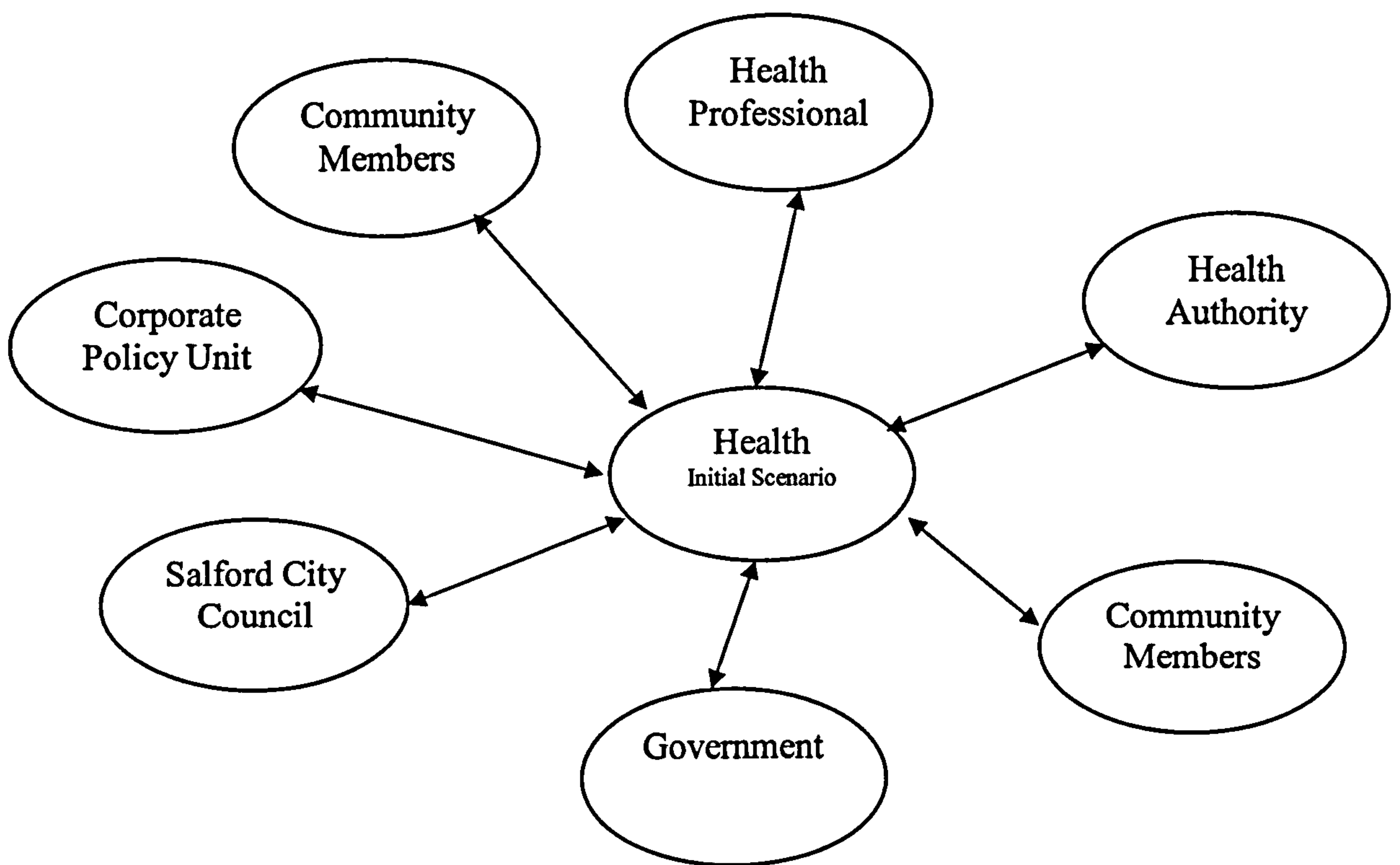


Figure 10 Health Scenario Stakeholder Map

While originally considering the patient/client recipient of healthcare information delivered through ICT as one stakeholder group, further thought led to a questioning of this assumption. The client may believe they have a right to all available healthcare information, leading to a deontological ethical stance based on the *prima facie* ‘right to information’. However, as a result of the client having access to this information, their anxiety may be increased and their stance may be more consequentialist in nature, perhaps egoist, based on an assumption that having access to such information will lead them to worry about their state of health. The latter of these assumptions was derived from a discussion at the area health authority that considered the potential impacts of delivering healthcare information to a badly prepared community. Even so, this analysis led the researcher to consider the

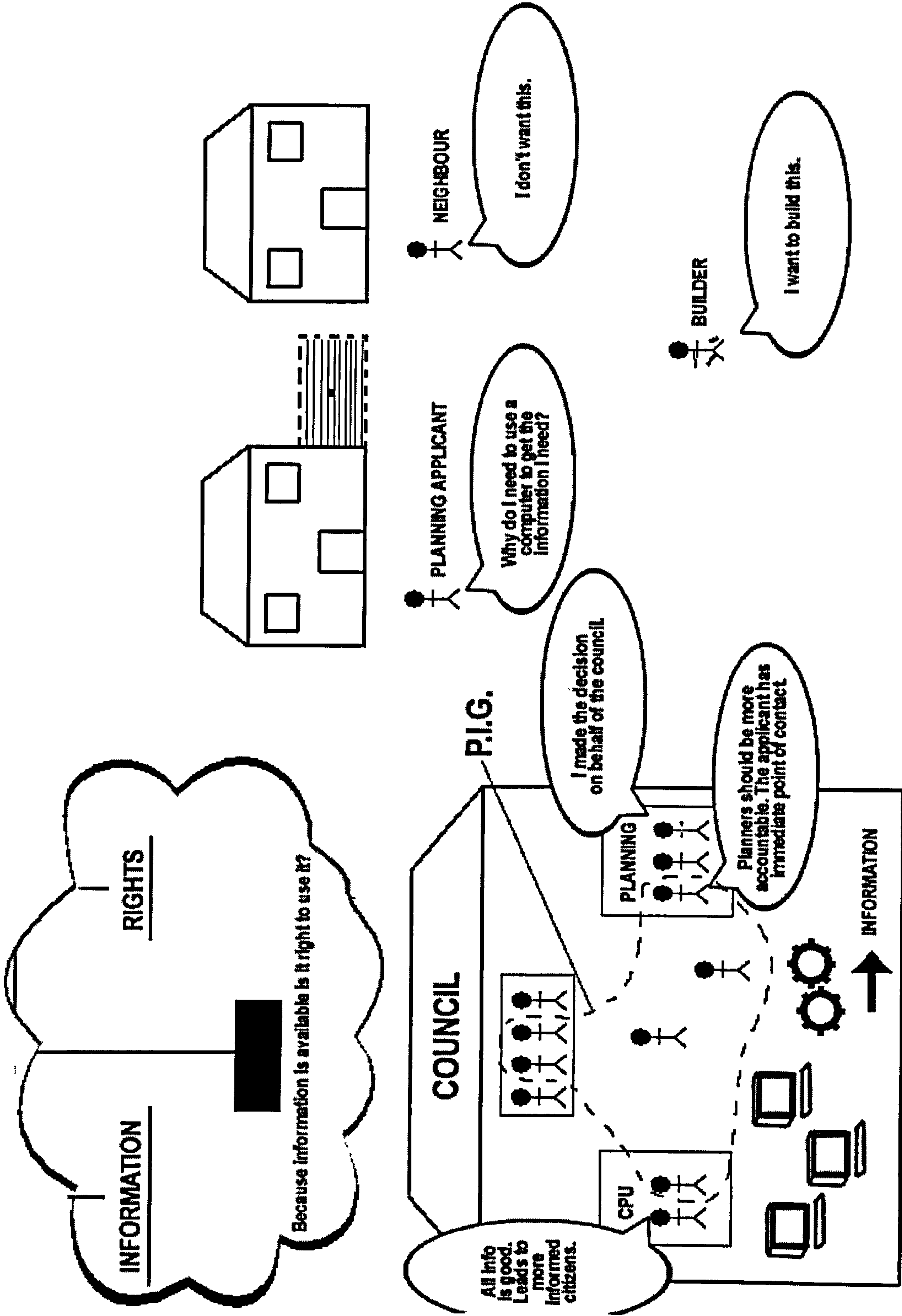
appropriateness of having one stakeholder with two different ethical stances, potentially in conflict. After careful consideration the researcher takes the view that there is not one stakeholder with two different ethical stances. There are in fact, two different stakeholder groups with different underlying worldviews that lead to the different ethical stances. The use of root definitions and CATWOE mnemonics showed that patients/clients could have different perspectives, which would lead them to belong to different stakeholder groups.

4.8 *The Planning Decision Scenario*

The planning decision scenario focused on the use of ICT to provide useful public information to inform the community. The working group, PIG, was designed to bring together information providers and to consider ways of disseminating public information. The detailing of planning decisions was one area that was considered for information provision. Salford City Council wished to provide more information to members of the public concerning planning decisions; this could be made possible through ICT. This led to the idea that the name of the individual who made the actual planning decision could be established and published electronically. It is important to emphasise that this was viewed as additional information; this information was not generally available to the public at the time of these discussions. The information could be acquired and made available through the use of information and communication technologies. It was suggested that this would give the applicant and other interested parties a first contact for any queries or problems arising from the decision taken. During subsequent discussions with members of the corporate policy unit concerning the issues relating to the electronic provision of public information, it became clear that the members of the unit considered some aspects of the initiative to be beyond the need ethical reasoning.

At one stage of these discussions, a member of the CPU suggested that ethical analysis may assist in healthcare, privacy and information security issues but would not be necessary for public information areas. This background, and resultant discussions, led to the use of the ethical analysis framework to explore the planning decision scenario.

In this case, the presentation of this scenario follows the description of the ethical analysis framework. Firstly, a rich picture was constructed from an initial reading of the situation, aided by stakeholder analysis. In fact, a two-way process between rich picture generation and stakeholder analysis provided a clearer view of the situation. The rich picture was generated partly through considering the impacts of the decision upon identified stakeholders. At the same time, stakeholders were identified by considering the emerging issues and aspects of the rich picture. From this interplay between the two techniques the completed stakeholder map and rich picture emerged. Then, root definitions and CATWOE models for the pertinent stakeholders were constructed. Finally, the ethical perspectives for each stakeholder or stakeholder group were considered and defined.



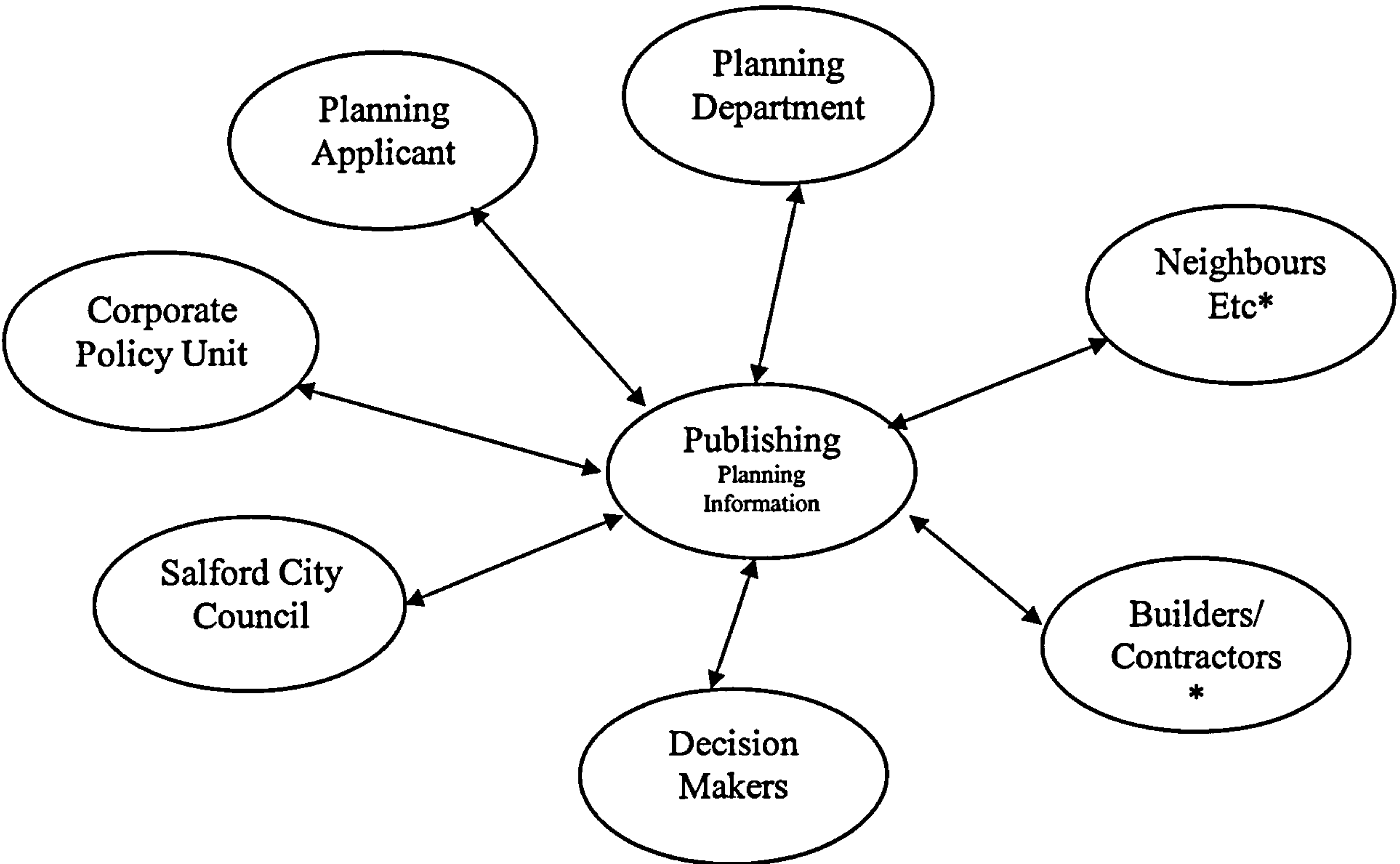


Figure 11 Planning Information Scenario Stakeholder Map

This section attempts to explain pertinent elements from the models, defined within the ethical conceptual framework. The applicant seems likely to be acting for his/her own advantage and thus an egoist ethic can be assumed. However, the analysis highlights two different views that the applicant may hold, each of which leads to a different ethical perspective. Firstly, the applicant may see the publication of the decision maker’s name as an advantage, to be used as a tool to get his/her planning application approved. On the other hand, the applicant may feel that the information provision via ICT is a barrier to getting this information; they may feel that the information should be made available through conventional means. The researcher considers the decision maker to be holding an egoist ethic that is based upon the worldview that he/she is not responsible for the decision being made; in other words, he/she is making the decision on behalf of Salford City Council, and is therefore not

solely responsible for the decision. The worldview of the CPU is based upon the notion that supplying all available information will lead to a more informed community- this stems from the ethical perspective implicitly taken. This perspective is group consequentialist in nature and further assumes that information is amoral. Taking the uncontroversial view, that Salford City Council is acting upon rules and regulations, a deontological ethic is assumed. Salford City Council could equally be acting upon an egoist ethic or acting for the common good, a utilitarian ethic.

Table 11 Planning Information Stakeholder Table

Stakeholder	Transformation	Worldview	Ethical Perspective
Decision Maker	Decision Maker not Responsible -> Decision Maker being responsible	I am acting on behalf of Salford City Council, I am not solely responsible	Egoist
Corporate Policy Unit	Not well informed applicant -> Well informed applicant	This (and any) information is good and leads to a more informed community	Group Consequentialist
Applicant	Being sent relevant information -> having to access technology to gather information	I should be able to get the information I need without using technology	Egoist

The first question the above analysis poses is: who is responsible for the planning decision? Is the decision maker making the decision on behalf of Salford City Council or is he/she solely responsible? Mason, *et al*, (1995) discuss the nature of information and the way it can be used to shift burdens and responsibility, sometimes unknowingly. In this case the mere provision of extra information concerning a planning decision results in the burden for that decision being shifted to the employee and away from the planning department of Salford City Council. Even if rules and regulations allow for this information to be published, we must still consider the

justice or fairness of such a decision. The question must be asked whether it is fair for the employee to be responsible or to bear the burden that his/her name is attached to a planning decision.

One of the important ideas behind the Little Hulton Community Campus initiative was the idea that information should be made available at the right time, in the right place and via the right delivery method. However, with regard to the case above, members of the CPU seemed to consider that any information that could be made available using information technology would lead to a more informed populous. This is contradictory to the general approach taken by the CPU, which was generally more critical in nature. The researcher came to the view that there were political considerations involved; the provision of public information was not the sole responsibility of the CPU, and other vested interests could not be dismissed.

While the analysis above, and modelling, show the ethical perspectives of the stakeholders involved in the planning decision scenario, the researcher was not entirely satisfied with the outcomes. Therefore, other ideas were used to consider the outcomes of the ethical framework which the analysis identified.

Four ethical principles identified by Wood-Harper *et al* (1999) were applied to the scenario and the resultant models that the framework uncovered. Of these four principles, the later two uncovered issues within the case that further enhance understanding of the situation. When considering Principle three, the ethical distribution of the benefits of the publication of planning decisions through ICT, the appropriateness of the publication of planning decisions using ICT comes into

question. Are there more appropriate methods for delivering this type of information to the concerned parties?

However, it is Principle four that provides most insight into the analysis described above. Principle four encourages us to consider the potential misuse of an information system and its resultant impacts, while reminding us to base our stance on firm explicit ethical thought. The potential for misuse of the publication of the decision maker's name may not have been considered if the ethical analysis had not been undertaken, thus leading to potential ethical risk or harm to the decision makers and/or planning applicants. Perhaps more importantly, the ethical stance taken by the corporate policy unit was entirely implicit. By considering public information to be beyond ethical reasoning, an ethical stance was in fact taken implicitly that information is amoral. It is the fact that the stance was implicit, that it was not based on any ethical reasoning, which is most telling.

The ethics behind the electronic publication of the name of an employee who makes a planning decision is arguable. Wherever you stand on the issue is not as important as seeing that there is an issue that needs to be scrutinised. Some may disagree with the arguments against providing more planning information, but at least the question must be asked. It is because the issue is ethically arguable that it is shown to be important to conduct ethical analysis for more than just the 'big' questions. As information and communications technology moves ever closer to everyday life, there will be important issues where information provision may be conducted without proper consideration to the impacts it may cause. The capture and resultant provision of information is becoming a technically simple task. However, the ease of provision

may need to be tempered by ethically considering its impact. The ethical model presented here, together with the four ethical principles, may be one way to ensure that issues such as these are considered explicitly. It seems that while the ethical framework uncovers the ethical perspectives of those involved in a situation, there may be latent issues that are of potential ethical concern. This scenario, through the application of the ethical framework and the subsequent use of ethical principles, identifies an underlying issue of accepting the ethical neutrality of information.

4.9 *The 'Security' Scenario*

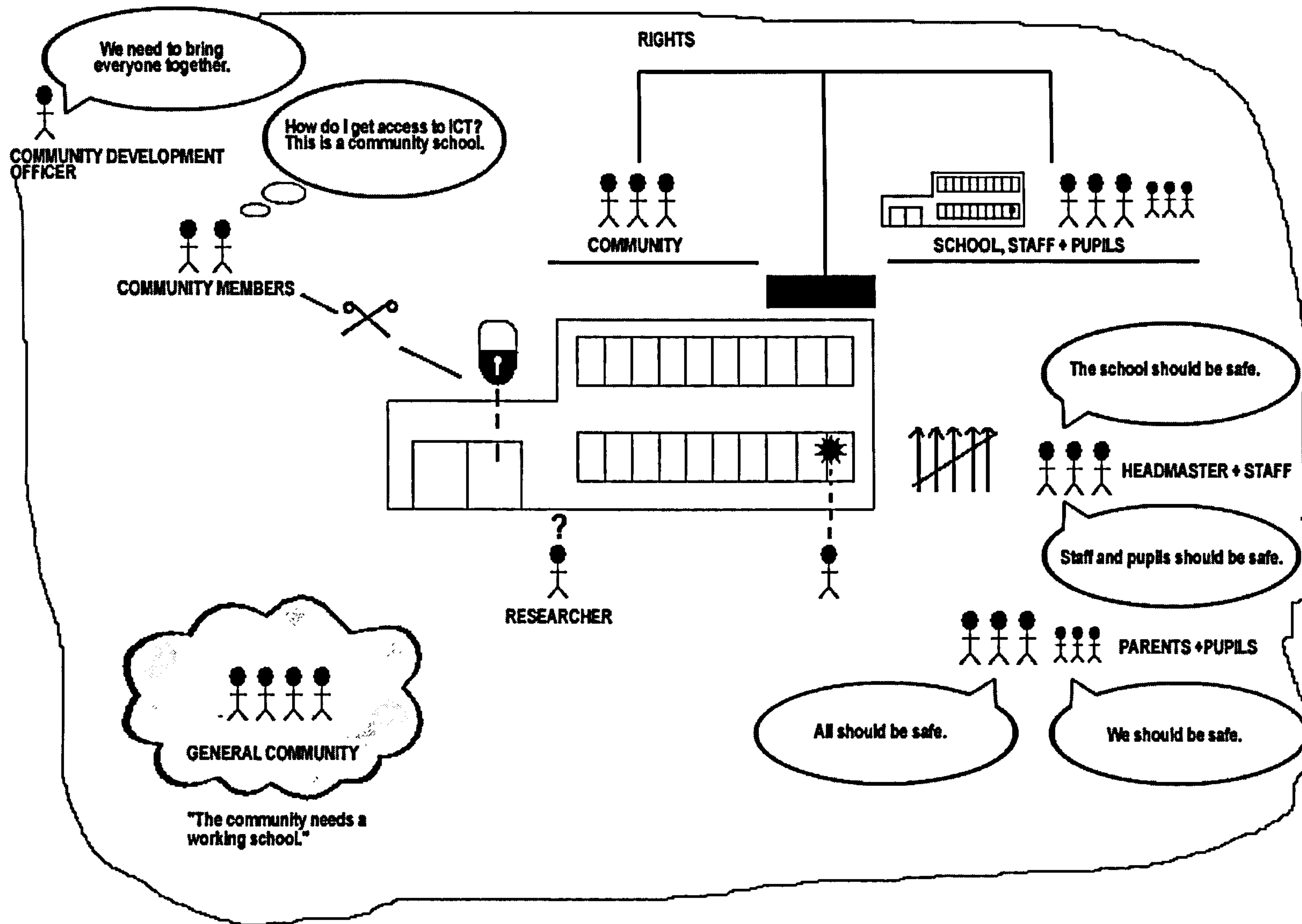
The background to this scenario is important. Indeed, it prompted the researcher to bring the issue of security to the attention of the members of the information development organisation, from which the scenario developed. The researcher attended the LIDO meetings at the local community primary school. Normally, the researcher gained access to the school through any available entrance and made uninterrupted progress to the meeting room. While these meetings were running, a number of unfortunate incidents regarding attacks on school pupils and teachers happened within the UK. These incidents caused alarm throughout the government and the teaching profession, which led to a less relaxed attitude to school security. Some time after these events, the researcher attended a LIDO meeting and was confronted with a change in the community school's policy to visitors. On arriving at the school, only one door was accessible, and waiting directly behind this door was someone to scrutinise visitors to ascertain their right to be at the school. After being accepted as a legitimate visitor, the researcher was then escorted to the meeting room and was presented with a label denoting visitor status. This change in policy led the researcher to perceive that school security was important for the protection of the

pupils and staff. During the meeting that followed, the researcher posed a question concerning school security given that the community as a whole was to have access to technology housed therein. The researcher believed, perhaps naively, that everyone would have the same perception of security as the researcher, given the change in the school's policy towards visitors. This was not the case, as a number of disparate views of security were put forward during the subsequent discussion. Among the different views of security articulated, two were significant in prompting subsequent meetings, discussions and the analysis that followed.

The general security of the school and its contents was considered to be important. The view expressed was that the technology on the site might attract people with the intent to burgle. Moreover, the concern seemed to be only for the school and its contents and not for the technology itself. A member of the school told of an incident, stating that when the school acquired some audiovisual equipment it attracted thieves to the school whose general damage to the school cost more than the loss of the equipment and also affected the school's ability to educate its pupils. This view must be considered against the background of the community and its surrounding area, which had been plagued by burglaries and vandalism. The school was a main target for theft and vandalism; indeed, a television programme investigating the Little Hulton area highlighted the plight of the school. This programme included an interview with the headmaster of the school, who expressed the school's intent to prevent further attacks of theft and burglary.

The second view was more involved and looked at the security issue from an entirely different angle. The notion that adults should be kept away from children was seen as

contradictory to one of the community's aims; namely, the integration of the young, adults and the elderly. The view given was that the separation of the young and old within the community was leading to social dysfunction and any further separation of these groups would further exacerbate these problems. This led to a fundamental rethink of the issue/scenario; this is explained later and re-considered in Chapter 5, in a conceptual analysis of this thesis. As with the planning decision scenario, a rich picture was formed in conjunction with stakeholder analysis, and from this, root definitions and CATWOEs were created. Finally, the ethical perspectives were interpreted.



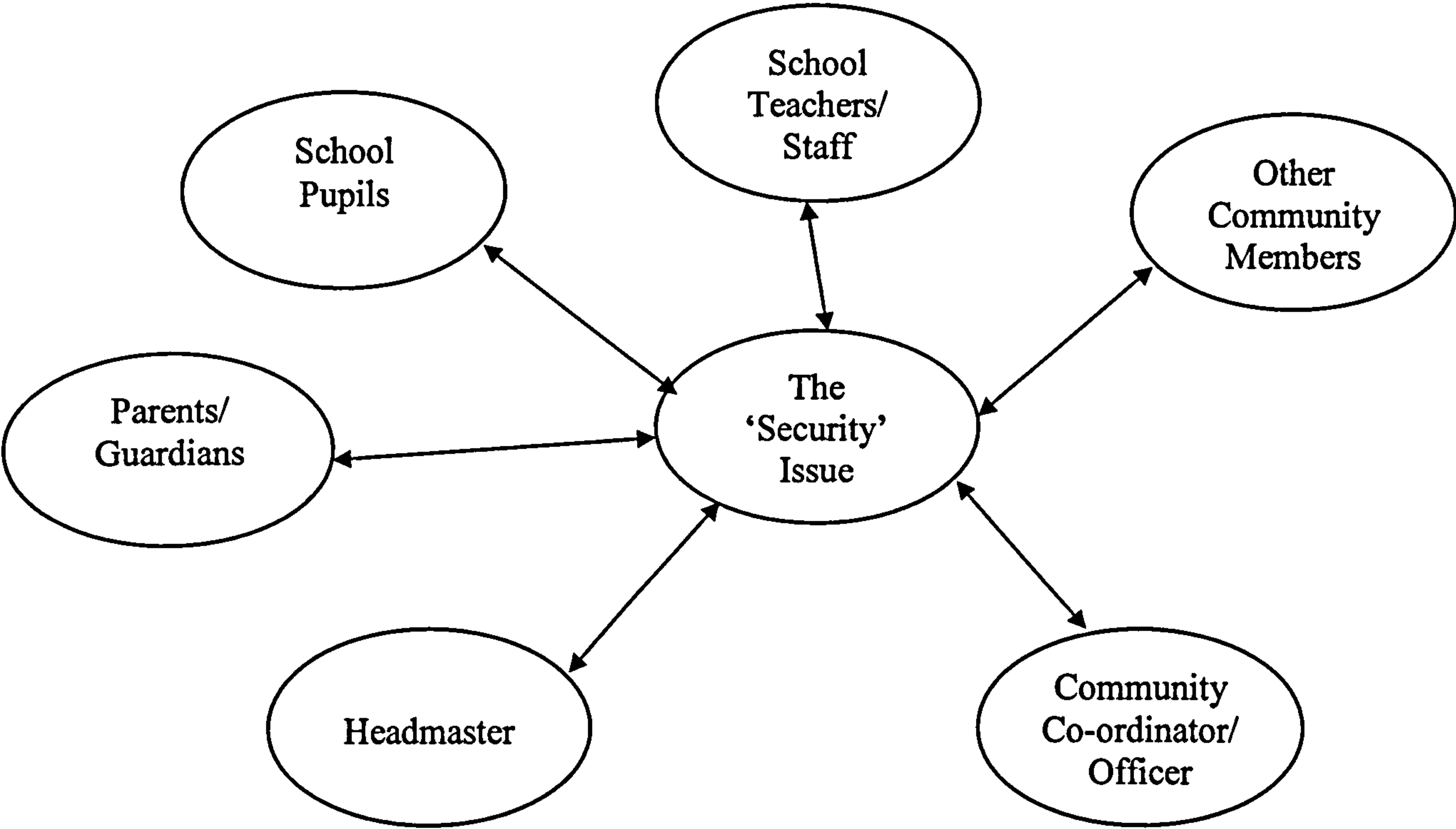


Figure 12 Security Issue Stakeholder Map

Table 12 Security Issue Stakeholder Table

Stakeholder	Transformation	Worldview	Ethical Perspective
Pupil	Safe school -> Less safe school	I should be secure from harm while in school	Egoist
Parents	Children being safe -> Children in danger	All children should be secure from harm while under the care of the school	Group Consequentialist
Headmaster	School and property safe -> School and property in danger and school a bigger target	The school and its property should be safe from theft or vandalism	Group Consequentialist
Community Co-ordinator	Separated community -> a more separated and dysfunctional community	There is a need to integrate the different age groups in the community	Utilitarian

While not ascertained, the pupils would tend to have an egoist ethic, based on the worldview or perspective that they have a right to be safe while at school. The pupils' parents may share this perspective, but they may in fact take a group-based view that all of the pupils should be safe from harm while under the care of the school. The headmaster held the view that the school should be the beneficiary of any good; the school and its property should be secure. The community co-ordinator seemed to be acting for the good of all, by stating the importance of integration of the different ages groups within the community. Indeed, the community co-ordinator did not see this as a 'security' issue at all.

The issues raised from the analysis and modelling fuelled a debate concerning the security scenario, allowing for further interpretation and understanding of the situation. This is described below, and the conceptual impacts are considered in Chapter 5 of this thesis.

The original different perspectives identified by the researcher prompting the issue of 'security' shows the usefulness of such a technique to tease out underlying ethical perspectives. The diverse range of perspectives was an initial surprise to the researcher, given the powerful events that prompted the discussion and the significant changes in school policy. However, given the diverse backgrounds and stakes of the information development organisation, the resultant differing ethical perspectives do not seem unlikely or indeed surprising. The ethical framework allowed these perspectives to surface and be explored, which eventually led to a greater understanding of the situation. The initial discussion identified what each of the

internal (members of the information development organisation) stakeholders thought of as their perspective on security.

However, by exploring these with the ethical framework, the underlying perspectives, stances or worldviews emerged. The ethical framework not only allows for the identification of stakeholder perspectives on a given issue but also articulates the underlying reasons for the adopted stance. This allows for a thorough exploration of all of the views and ethical perspectives prevalent within the situation. From this standpoint, implications of other ideas and other stakeholder perspectives can be examined. For example, the implications of the headmaster's ethical perspective, based on the protection of the school and its contents, or more correctly on the school's ability to function, impacts on the notion of community integration.

The view adopted by the community co-ordinator, which was contradictory to the notion of a security issue, instead saw the situation as a community integration problem. This highlights another important aspect or mode of the ethical framework, where the framework is utilised as a learning process to gain understanding. Using the technique in this manner aids debate and learning which can lead to greater understanding. (Wood-Harper *et al* 1999) To this end, the models used within the framework do not lead to answers to the ethical quandary under investigation. Nor do they lead to a situation where other techniques can be used to resolve conflicts that the framework identifies. Used in this mode, the framework and its resultant models and theories are used to learn about the situation, models and theories in an attempt to gain greater understanding. In this case the different views or perspectives of security became secondary to the notion of community integration.

Subsequent discussions concerning the debate between security and community integration realised an idea to act positively within the situation, to use the technical enthusiasm, abilities and knowledge of the young to aid and assist the older population. Most participants in the discussions wished to engage all age groups in information and communication technologies and saw the idea as one way to achieve this and to help to bring different sections of the community together.

This idea was an important stated aim within the ‘The Problem and the Opportunity’ document that formed part of the project initiation and was an element of community strategy.

Importantly, this shift from the issue of security to an issue of community integration was prompted by the analysis of the ethical perspectives held within the situation. The framework prompted and structured a learning process that led to deeper understanding and possibly led to changes in the views held by some of the stakeholders involved in the situation, notably members of the school.

4.10 Section Summary

This section has presented three scenarios where the ethical analysis framework was used to explore issues that arose during the fieldwork part of the study. The first details how the ethical framework was first used by the researcher in a limited fashion. It was noted that during this stage the researcher was learning about the ethical framework. The next two scenarios provided a much more complete use of the framework. A number of lessons were derived from this analysis; for example,

how an identified stakeholder group can be further explored, with other stakeholder groups emerging, based upon their underlying worldview or ethical stance.

4.11 Chapter Summary

While this chapter has been presented as two separate sections it should be noted that there was interplay between them. Each of the scenarios arose from meetings while the researcher was acting as a member of the various community groups or from external discussions stemming from these meetings. Also, the analysis and the creation of the models led to the surfacing of other (deeper or hidden) issues. These issues were taken back into the research subject by the researcher and prompted discussion and debate. It is clear to the researcher that the application of the ethical framework alone would not have surfaced the underlying ethical nature of the situation; learning about the situation before applying the framework may lead to deeper understanding. It is also clear that the ethical framework can assist in the understanding or interpretation of the overall situation.

This chapter has presented the fieldwork part of the study, including relevant background information, interpretation and analysis of the research subject. The chapter has also detailed how the ethical framework was used to consider the ethical quandary prevalent within the research subject. The two parts of the chapter are considered to be interwoven as a cohesive whole. For more information about the current policies and ideas from Salford City Council, see Appendix B. The information there is taken from a web-published information society report and echoes many of the ideas of this chapter. For instance, the phrase, “*The Best Possible Quality of Life for the People of Salford*”, echoes the initial root definition, which was

to enable community members to manage their lives and fulfil their potential. The next chapter explores the conceptual and theoretical implications of the findings and lessons of this chapter, with reference to the conceptual framework as described in Chapter 2 of this thesis.

Chapter 5

Conceptual Analysis

“we think dialectically. We try to find flaws in the argument[s].” (Gaarder 1991)

This chapter of the thesis draws on the work from the previous chapters, and the study as a whole, partly to consider the issues and areas of importance that the researcher has noted and partly to fulfil research protocol criteria. This chapter has been written after a period of reflection that considered the original area of concern, the literature review, the resultant framework of analysis and the fieldwork. The role of reflection was identified in Chapter 3, the research method of this thesis as a useful instrument for research and indeed was included within the research protocol of this study. While the chapter draws on work and material from previous chapters, additional material is introduced where applicable, including events from the fieldwork that have not been fully explained, and experiences by the researcher throughout the study.

5.1 Conceptual Framework Analysis

This section of the chapter relates evidence and interpretation from the fieldwork back to the conceptual framework. Firstly, ideas stemming from the information society section of the framework are laid out followed by ideas relating to ethics. These discussions, together with the next section, which details a number of reflections, are used to reconstruct a modified conceptual framework.

5.1.1 Information Society

The role of partnerships was one aspect of the use of ICT within public initiatives that seemed to be common within the literature and was a main component of the conceptual framework. The makeup of the Little Hulton initiative was certainly based upon partnerships, such as the LIDO group or the internal PIG group, but the fieldwork, however, uncovered a richer use of partnerships than was found within the literature. Here we do not have just wide-ranging partnerships we have classes of partnerships used for different purposes within the initiative. Specifically, we have strategic, internal and external partnerships. At a strategic level, the relationships between Salford City Council, the University of Salford, and Manchester TEC were maintained to ensure best practice during the initiative and to bring in the latest and innovative ideas. Any initiative as complex and wide ranging as the Little Hulton Community Campus require a focal point within an organisation. This leads to the requirement for internal partnerships, or more precisely relationships, to help carry others within the organisation along with the project, supporting and contributing to it. The external partnerships were used in a manner similar to the literature in that they were used to expand the reach of the initiative and to ensure that essential areas such as health were covered using expert knowledge.

The nature of the partnerships within the initiative also allowed for the implementation of the project through multiple access points. Indeed, the initiative was referred to as a campus encompassing many points of service. The main reason for the use of multiple access points, as expressed by the conceptual framework, was the need to ensure broad use of the services; this idea was directly expressed during the fieldwork by a number of actors. The aim was to reach as many people within the community through the idea of having different environments in case people felt

uncomfortable attending a particular venue; in one case it was thought that some people within the community may not like entering the school thus other access points were needed. For example, it was thought useful to have an access point within the medical centre, not only to capture people not willing or able to attend other venues, but also to provide targeted services in an appropriate setting. This idea of targeting particular groups using the properties of particular access points (or people's perceptions of community locations) was not found within the literature but seems a useful concept. Another example is the use of the library for a homework club. The idea behind this is to provide services, such as health promotion or supplemental education, and not just simple technological access points (Kendall and Wilkinson, 1998).

Such a wide and diverse use of multiple access points and partnerships requires careful planning and a co-ordinated strategy to ensure that people are aware of what services are offered where and to restrict the duplication of work. During the early stages of the initiative, at the outset of the fieldwork, the project had more than adequate planning and a strategy reinforced by the project champion. However, events as detailed within the fieldwork, led to the lack of a cohesive strategy, which subsequently led to the disintegration of the partnerships (Southern, 2000). It is also important to note that the loss of the project champion seemed to be a pivotal point with regard to the general disintegration of the partnerships and strategy; while partnerships and multiple access points are useful, key individuals are important for such initiatives (Southern, 2000).

Communication and interaction between community members was seen as an important factor with regard to the use of technology. The Little Hulton community campus did not especially cater for electronic communication between community members. Instead, the campus officials and members within the LIDO group believed it was more useful to bring people together in a social environment, for instance, at a social gathering within the community school, rather than provide electronic forms of communication. The researcher considers this to be equivalent to the notion of sociable learning as expressed by Cockburn, *et al*, (2001) The idea within the Little Hulton initiative, was to use information technology as a mechanism to combat social exclusion; to bring the community together, rather than to provide the technological means for a virtual community.

With regard to public libraries, the fieldwork reinforced the conceptual framework by showing the members of the library service within the community to be willing and enthusiastic toward delivering information services through ICT. Indeed, it was the need to deliver ICT projects quickly that led the library to consider developing projects outside the Little Hulton community campus, toward the decline of the initiative. However, the majority of services offered by the libraries within the community were passive in nature; community members were required to attend the library and specifically request the services on offer. To a certain extent this approach was complemented by community workers and other officers operating out of the libraries, providing pro-active services. For example, the community healthcare workers who targeted specific groups and actively approached these groups with information and services is certainly pro-active. Other services offered by the libraries seem more complicated than the passive or pro-active ideas as espoused by

Mostert (1999). For instance, the homework club is passive in that school children need to attend the club, but pro-active in the sense that the service is being offered due to a perceived need within the community and the service is attempting to fulfil this need.

The fieldwork exposed the need and the desire within the community groups to offer a wide range of information services through multiple delivery methods, with a bias toward word of mouth, for the foreseeable future. Some of these delivery methods were specifically targeted at certain identified disadvantaged groups within the community. Indeed, the identification process often led to the adoption of a specific delivery method to reach the intended target. Questions, such as ‘what information do relatives and friends of drug users need?’ and ‘how do we get it to them?’ were asked and answered. In this respect, local information was seen as important for the delivery of tailored services meeting the needs of the community. These ideas of targeted services or campaigns for particular groups are similar to the ideas contained within the resource centres, as identified by Mostert (1999), with the exception that multiple groups were targeted to encompass the whole community. The use of community workers, working directly with community members, assessing information gaps and information needs is a further way to ensure that information services offered by the initiative are locally-based and relevant.

Much of the discussion above relates to the idea of access as detailed in the conceptual framework. It is clear that with the idea of delivering services rather than sterile access points, the use of a wide variety of tailored delivery methods, including word of mouth, the idea of sociable uses of the technology, the use of pro-active

community workers and the goal of improving the quality of life within the community, that access as used within the initiative is not solely technological. Indeed, access is used within the initiative in a complex and broad manner, matching the deeper explanation found in the conceptual framework.

The financial element of the broad approach as identified within the fieldwork links directly to the conceptual framework. The complexity of funding that was uncovered during the fieldwork further justifies the need to consider the costs of providing access to information technology and services. The funding required also highlights one of the roles that government can play in ensuring the adoption of the information society. The sheer costs involved require funding from local, regional, national and international funding bodies. Government also has responsibilities in establishing strategies and encouraging infrastructure development at regional and national levels, potentially expanding this to provide international links. However, the importance of local government within such initiatives seems vital. The initiative was incepted as a direct result of community reports detailing the social problems within the area that spurred the city council into action. The initiative was started to address these problems and find better ways of offering services to the community. Local government seems vital as the authority to pull partnerships together, deliver services and provide overall strategy (Horrocks and Bellamy, 1997).

Thinking in terms of the innovations and best practice ideas from Horrocks and Bellamy, 1997) the LHCC was to provide: community workers with enriched information resources (actually through a give and take approach); deliver holistic community services from decentralised responsive community outlets (enabled by

multiple access points and partnerships); focused client orientated service delivery by an emphasis on achieving results and improving the quality of life of community members rather than on just providing access to technology, this also leads to tangible and demonstrable results rather than sterile usage statistics (Horrocks and Bellamy, 1997).

With regard to regeneration and development of the information-based communities, the evaluation criteria as used by funding regimes such as the European Union seems at odds with the ideas found in the conceptual framework. The fieldwork provided evidence of simple numerically-based evaluation criteria ('bottoms and boxes') being used to justify funding by considering the use of the technology. However, the conceptual framework explored the idea of evaluating a wide range of issues that affect regeneration. Evidence from the fieldwork expands this idea by suggesting that focusing on projects and evaluating the benefits that people gain from the technology provide more useful measures, looking closely at quality of life changes. Taking a broader view of access also helps with ideas concerning evaluation. It becomes relevant to evaluate what incentives and guidance people are given with regard to information and information services. Concisely, considering the contribution to social progress within the community is the best approach for evaluating projects such as the Little Hulton Community Campus (Southern, 2001; Madon, 2000).

The section within the conceptual framework that dealt with economic regeneration considered that a broad approach, rather than one based on technology alone, was important. The fieldwork uncovered what was considered a useful idea with regard to business enterprise within the Little Hulton community, which was the idea stemming

from the business centre. It was thought useful to provide ICT-based services from the centre to local businesses, attempting to provide them with competitive advantage in order to help the local economy. However, more importantly, the idea was that these services were to be provided by people within the community, initially provided with external expertise but with an emphasis on self-reliance in the medium term. Essentially, the first group of business centre workers would be trained but then they would pass on this training to local businesses and other business centre workers. The importance and relevance of this to the ideas of economic regeneration is twofold; firstly, the business centre was not solely portrayed as a technological solution, it was conceived as a community service; secondly, the inception of the centre would also tackle existing community problems such as unemployment and a lack of technological skills within the community, together with the goal of the community's business centre becoming completely self-supporting (Southern, 2001). A finding also worthy of note with regard to community and economic regeneration is the initiative's commitment to tackling social and environmental problems, putting in place the prerequisites for regeneration and preparing the community to ensure people wish to and can take advantage of the information society (Southern, 2001; Madon, 2000).

Most of the myriad of issues as found within the fieldwork cannot be directly related to the conceptual framework, with the exception of the financial costs involved. Of the missing ones, the discussions above have covered the community projects, word of mouth, and social/welfare. Leaving the temporal and structural issues, evidence from the fieldwork has shown the importance of the timing of interventions within the community, and that without structural changes the introduction of ICT into

communities is simply not possible. These two issues, together with the others previously covered, represent a holistic approach to the study of public ICT initiatives and a fundamental step away from a technological bias.

While literature dealing with virtual issues and computer-mediated communication was not on the whole relevant to the aims and objectives of this research study, a number of ideas were seen as important and included in the conceptual framework. Relating the fieldwork to these ideas leads to the following conjecture. In terms of members of the community using the technology in unexpected ways, the provision of services focused on social benefits and improving the quality of life requires a flexible approach, thus allowing community members to mould the services to meet their needs with the help of community workers. This certainly counters the argument that the information of the community should be known before intervention. The approach detailed within the fieldwork uses the technology not only to alleviate immediate problems, but also for the exploration of the changing needs within the community through pro-active community workers. These ideas and the idea of using technology in a social manner offer a different approach than the use of the technology to create social spaces through communication and interpretation. Evidence from the fieldwork cannot answer the question posed about how we conduct research within virtual spaces. However, evidence from the fieldwork does suggest a wide-ranging interpretative approach, possibly considering the ethical implications, is appropriate. While not matching the ideas precisely, the fieldwork did uncover issues with both the temporal and physical aspects of the introduction of technology into communities.

5.1.2 Ethics

The role of normative ethics was important for the ethical analysis of the issues prevalent throughout the fieldwork part of the study. In each of the scenarios normative ethics played an integral part in the understanding of the ethical dilemmas and stances within the situation. More importantly, the theories offered a means to open discussion and facilitate a process of analysis of the situation, often leading to other ways of thinking about the situation, such as the idea of social integration as detailed within the security scenario. It is also important to note that the theories were never used as labels in a prescriptive manner, they were only used to aid thought about the situation. Finding how to measure 'the good' was often a good starting point during the analysis of the scenarios; on many occasions this led to the surfacing of what different groups felt was important, leading to discussion and a greater understanding of the situation.

While the normative ethics theories and ideas were important in analysing the ethical quandary within the scenarios, a more important element was the need to develop these from a deep understanding of the situation. This deep understanding was only achieved by being involved in the situation itself. This mirrors the ideas stemming from the work of Hodge (1995) concerning the use of theories developed by Heidegger for ethical analysis. As described in Chapter 2 of this thesis, the normative ethical theories were seen as sterile to Heidegger. Hodge (1995) takes this and the idea of *Daisen* to develop an idea of ethics through human involvement. This idea of in-situ ethical analysis (being involved) and using other ideas to stimulate understanding within the situation is fundamental to the researcher's conception of ethical analysis. This represents a complete departure from the original conceptual ideas as outlined in Chapter 1 of this thesis. Attempting to brand people with ethical

stances (based on thinking style or otherwise) from outside of the situation is now seen as flawed from an ethical analysis point of view. Analysis and understanding of complex ethical quandary requires involvement. This approach takes ideas from the case analysis idea stemming from both business and IS ethics, in that true analysis is required, the issues are not known or prescribed, but are instead uncovered, leading to a thorough exploration of the situation.

The literature review of ethical theory and business ethics in particular, uncovered a possible limitation of the use of stakeholder analysis for ethical analysis. The arguments against the use of stakeholder analysis are summarised below:

- Stakeholder ideas do not provide a rule or method for judging questions such questions as, ‘who is entitled to hold the stakes?’
- Stakeholder ideas are, by their nature, limited to interests rather than principles. In general, principles are much more difficult to surface and identify and can rarely be satisfied through the trading of stakeholder interests

Answering the first of these criticisms by using the experiences of the fieldwork is difficult. The fieldwork showed the ability of stakeholder analysis to explore situations of ethical concern. Stakeholder analysis also helps tease out underlying issues that were prevalent within the situation. However, the selection of who was entitled to hold the stakes, or who was to be included in the analysis, was done by the researcher and through consultation with key members of the community initiative. The question was not wholly addressed.

The second criticism was addressed by the introduction or adaptation of the principles of ethical technology, as advocated by Churchman. These principles are summarised below:

1. Ethical reasoning should be conducted throughout the lifecycle of an information system, including inception, testing, distribution (implementation), modification and termination/withdrawal
2. Every information system should improve the ethical actions of its users
3. The benefits of an information system should be distributed to ALL people who have an ethical need for its use; in other words, there should be 100 per cent saturation of ethical users
4. The design of every information system should include: the design of its ethical use; the design of its ethical distribution; the design of its ethical risk; the methods for justifying ethical criteria

The fieldwork part of this study considered how two of these principles were used to aid in the analysis of the situation. Of the findings from the fieldwork exposed through the use of the principles, it is the lack of explicit ethical thought that was the most telling. Or, in other words, the assumption by some members of the initiative that some elements of the project were amoral in nature was uncovered through the use of the principles. While more work is needed to properly judge the usefulness of these principles, for this research study they have been useful and have uncovered important assumptions about the role of ethics within community initiatives.

As stated in Chapter 2 of this thesis, the standard or classical form of utilitarian theory concerns the maximisation of utility, well—being, or other measures of the good, while the negative approach's main purpose or concern is the elimination of suffering.

Looking at community initiative from a negative utilitarian view exposes the need to prevent more damage to the society and to attempt to alleviate the societal problems therein. This idea is based on not causing harm, a requirement, but preventing or relieving suffering, which is recommended.

During a conference, the researcher had the opportunity to present the ideas of engagement to respected members of the social informatics research group. He believed that the idea moved the argument concerning informing communities forward from the position of technological bias. However, he suggested that the idea needed work by referring to a scenario. This scenario concerned a drug addict who would not engage in information about drug abuse but would instead wish to know where he/she could get their next fix.

Having thought about this issue the researcher believes that a project that serves a community must serve the social values of the community. In this sense the community agree to certain social values and these are upheld via any service provided to the community. In other words, the information technology project can only function within the bounds of these social values, and engagement can only reinforces these values. This is directly related to the ideas behind social contract theory. The community members agree to live by the community's group values and any community service reinforces these values.

5.2 Reflections and Analysis

5.2.1 Engagement

During discussions within the various community campus groups, the corporate policy unit and within the further community, the researcher began to consider the role of information, its delivery and use within the community. A notion of engagement emerged, prompted by a number of discussions with the leader of the corporate policy unit and, separately, with a community health information officer.

The idea stemmed from an agreement that just the provision of information through ICT was not sufficient for the aims of the community campus project. As stated in the preceding chapter, the community and the people living therein had difficulties that community workers believed could be addressed with information provision. Moreover, it was believed that there were people within the community who knew they had a problem but did not see information as a possible solution to that problem. With this in mind, participants behind the community campus project wanted to target two groups of people; those who had an information need, and those who had a problem but could not translate this into an information need. It was believed that those with an information need could use ICT, with training and assistance, to meet or fulfil their needs. For those who were not at that stage, there was a need to get them involved in information. From these ideas, together with the way in which the community information officers targeted community members, a notion of engagement was formed.

From the corporate policy unit's perspective, two strands of information were considered; information describing public services and lifestyle, and information-based aspirations. The first strand was to deal with immediate practical solutions via council services. Examples of problems articulated included a leaking roof, and rats in the back garden. The lifestyle strand was to provide information to allow members of the community to develop themselves or meet their aspirations, for example, through career guidance, or training and educational guidance. It was the lifestyle strand that seemed more appropriate to the notion of engagement. An example was outlined, based upon a person wishing to improve their employability but not taking advantage of the information services detailing education and training. The question was asked, how do we engage this person in information? Following Cockburn, *et al*, (2001), who contend it is easier to deliver technological answers to learning rather than create environments for sociable learning, it should be easier to provide sterile information to members of a community through technology rather than engage that community. Notwithstanding the difficulties involved, a number of possible answers to this question were ventured, of which two are presented here:

- The use of information co-ordinators and other actors within the community, including health visitors etc, to engage people in information was seen as an extension to the community information strategy. In this role, community workers would provide information to people they were in contact with and attempt to engage the people with that information
- The way in which information was presented to members of the community was another possible approach to engaging the community with information. It was believed to be important not only to supply information to people, through

whatever means, but also to direct people toward taking action in the local community. An example of this was delivering information concerning health and fitness and then directing people toward local sports groups and facilities

The theoretical underpinnings to the idea of engagement stem from the work of Churchman (1971) as he questions the idea of inquiry and knowledge. Churchman defines inquiry as “an activity that produces knowledge.” He further states that it has to make a difference or it should really matter. Turning to the idea of knowledge, an integral part of the conception of inquiry, Churchman considers three types:

- Knowledge as a collection of information
- Knowledge as an activity
- Knowledge as a potential

The first of the above definitions is the most commonly held conception of knowledge. To Churchman the idea that knowledge is a systematic collection of information “seems to rob the concept of all its life. Knowledge is a vital force that makes a difference in the world.”

It is the questions that Churchman poses against the idea of a library of science that relate directly to the idea of informing communities and engagement using information technology, as below:

- Does the library speak the same language as the user? – The question being asked here is not whether the user English-speaking or French-speaking, but

whether the concepts between the user and the library match, whether someone from a non-technical background be able to communicate with it

- What if the user doesn't know what question s/he really needs to have answered? – As the above discussion noted, many people within the community knew they wanted to change the way they lived but could not make the leap of faith to make a plan of action. What questions could they ask a library of science or a community-based information system?
- Should the library give some estimate of the quality of the information? – The internet contains so much information or *capta* (Checkland and Holwell, 1998), but of what quality? What are the implications of poor quality information? The discussion about information gatekeepers and the idea of informed consent (Mason, *et al*, 1996) relates to this idea of quality of information and how the information is turned into knowledge
- A national scientific library would be very expensive if it were to be available to all citizens – This relates to the community initiative by highlighting not the expensive nature of the endeavour, but more the distribution of the service throughout the community

Others also offer plausible arguments against a library of science notion of an information society of informed communities. For instance, Hoare (1998) alerts us to the need for what he refers to as functional literacy, or more simply the ability to use the collection of information as in the first question above. Kingsley and Anderson (1998) remind us that we need to engender interest and commitment through motivation in order to fill knowledge gaps. We also need to consider the local context

of technology from an indigenous cultural point of view and the local needs and uses of information (Madon, 2000).

A separate idea of acting authentically within an information society stems from a Heideggerian analysis offered by Cass (1998). This idea begins by considering how technology has its own way of being that is in conflict with our own, leading to inauthentic actions derived by acting or defining oneself in technological terms. The concept of 'fallenness' is introduced to explain why an inauthentic technological approach is often taken. Fallenness is perhaps summed up thus: "it is easier to 'take-on' pre-defined roles and ways of encountering the world than to struggle to discover what is authentically one's own" (Cass, *ibid*), a view shared by Geyer (1996), who suggests that, psychologically speaking, it is not easy to leave an old environment, with its security, to enter a new environment with its risks and unknown opportunities. To counter this easy-to-adopt inauthentic manner of using technology within an information society, we must approach it not on its terms but with purposeful intent and integrity (acting as ourselves), while still being open to discovery. In this sense we can access the opportunities it has to offer us. This idea of acting authentically with technology is not only another argument against a library of science (collection of information) view of an information society, but also a further argument for engagement. If we engage with information or technology we do so with a genuine purpose and we do so by engaging ourselves, thus acting with integrity and authenticity.

The other conceptions of knowledge also relate to the idea of engagement that stemmed from the fieldwork. In this sense, the idea of knowledge is the ability of

some person to do something or a potential to take action. According to Churchman, “the vitality of knowledge resides not only in its being merely a potential, but a potential of a very powerful sort.” The passage below, taken by Churchman from Spinoza’s Ethics, breathes life into the idea of engagement, which simply put is a way of involving people with information to help them reach their goals or change their goals.

The smaller mind of the learner is constantly worried about its freedom to do many things; it abhors the tedious discipline of learning calculation, learning scales, practicing the steps. It wants above all to be able to do something else; something other than what it is being forced to do. The larger, knowing mind at last attains the state of desiring to do the same thing no matter how the situation changes. But it also comes to realize that “doing the same thing” is not a rigid routine, mechanically preformed. Instead it is the ability to pursue what one most deeply desires....

5.2.2 Role of ICT in community regeneration

Considering the diversity of issues that emerged from the research study, presented in the preceding chapter, and the continued concern for external non-technical aspects of the regeneration of the Little Hulton community, ICT does not seem to be paramount for such projects. Throughout the time spent within the community and with various community officers and agents, the researcher was constantly told of the need:

- to create a better living and working environment
- to provide better communication, through new roads and public transport

- to nurture new community and commercial services and facilities, including the establishment of local shops
- to cultivate a community culture or spirit

This further demonstrates that while information and communications technology is an important part of community regeneration, particularly for the future, it was not seen as central to the social regeneration of the community.

However, ICT has an important role to play in such projects. The generation of new jobs and new businesses is one important aspect of this role. While this could be seen as mainly an economic argument, within this initiative social and economic regeneration were not seen as two different strands but rather an interconnected whole. There was a sense that economic progress could only happen as a result of social improvements, and that social conditions would improve through economic prosperity.

A member of the corporate policy unit voiced an opinion that “experimenting, testing and building models” for the information society in deprived communities may be questionable. While it is necessary to think about the future and begin to lay the foundations of the information society, existing society and communities must also be considered and the members of that society or community must gain from any intervention. The here and now is important.

5.2.3 Community

Chapter 1 defined how community was to be viewed within the confines of this thesis, as below:

For the purposes of this research study a traditional view of community is taken and defined as people sharing experiences and interrelations with others living in a physical locality, comprising all residents, workforce, official bodies and authorities that exist or have business within a defined area (Falk, 1998; Kling, 1999; DoE, 1990; European Communities, 1997).

Chapter 4 presented the fieldwork part of the study, which provided background knowledge of the community where the research study took place. This background work indicated that the community had been deprived of services and social structures, leading to societal problems.

A different view of community is explored by Singer (1993:1), when he considers how American society began by valuing the individual. He suggests that many of the social problems faced in American society are a result of a failed experiment in “which the narrow pursuit of material self-interest is the norm.” Taking the argument further, he suggests that within American society individuals break away from family ties, through choice or economic reasons, leading to a loss of community and a loss of values. Singer calls on the work of Tonnies to further explain the differences between individuals and community, using Tonnies’ two conceptions of society. The *Gemeinschaft* is a traditional view of an organic community, based on strong communal links, where “members identify with the larger whole, and can scarcely conceive of themselves as having meaningful life apart from it”, whereas the

Gesellschaft is an association of individuals. Hobbes rejected the idea of community in the *Gemeinschaft* sense and instead advocated the idea that individuals have one overriding desire for power above all others. Individuals holding this view see society as a mechanism to enable them to seek their own self-interest (Singer, 1993:1; Quinton, 1989).

These views of community have significance within this study when the ideas above are linked to the notion of moralnets. Singer (1993:1) draws on the work of Naroll to describe the role of moralnets within society:

Family and community connections that tie people together and provide an ethical background to what each individual does. Moralnets support individuals in their ethical choices, making it easier for them to choose what the moralnet regards as right.... Strong moralnets are built by deep social ties, emotional warmth between members of the community, social and economic support or 'insurance' for those that fall on hard times....

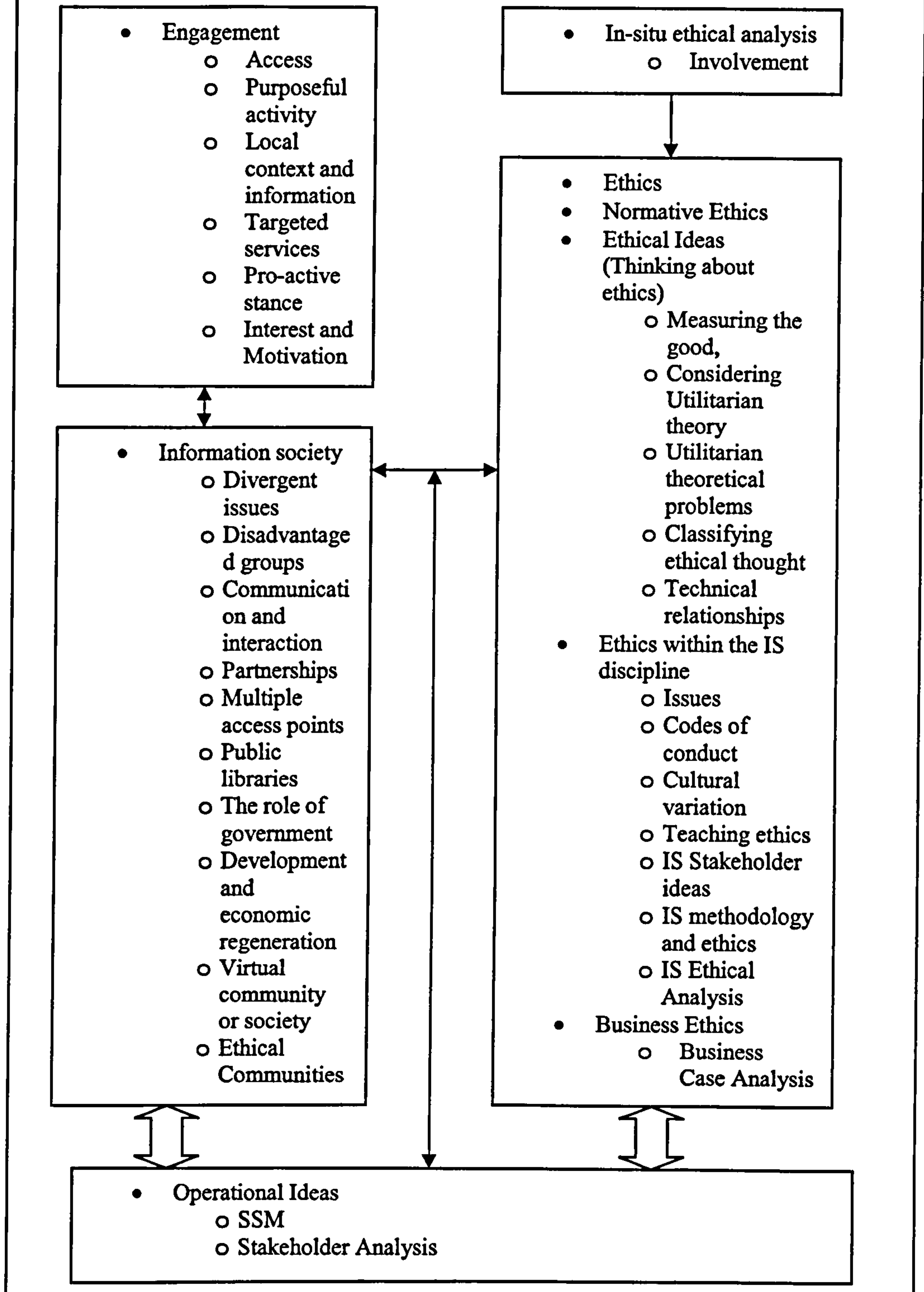
This research study was centred upon the ethical aspects of the introduction of ICT into physical communities. More specifically the study was focused on the community initiative and ethical implications the initiative would have on the community members. As such the study considered the ethical nature of the application of the initiative rather than the ethical consequences within the community. The study did not consider how the fabric of the community could be changed to either strengthen or weaken the moral fabric of the community. However, elements and analysis from the fieldwork show the importance of generating a

community spirit. This was why the security issue became an issue of integration and why access to information technology was seen as no more important than social gatherings. Could the second principle of ethical technology be applied here, that every information system should improve the ethical actions of its users? Therefore, should the community initiative improve the ethical conduct of the members of the community?

5.2 *Revised Conceptual Framework*

In Chapter 2 of this thesis, literature relevant to this study was reviewed and a conceptual framework created. This framework has been applied to the fieldwork part of the study, which was conducted via the action case method. From this stemmed the analysis and reflections above. This section of this chapter presents the revised conceptual framework in light of the above findings, presented pictorially below. The two main changes to the framework are the introduction of sections for engagement and in-situ ethical analysis. The importance of both these ideas has been discussed in the sections above. Additional elements have been added to the main information society section, covering the range of divergent issues, as evidenced by the fieldwork, and the idea of community ethics from the reflection above.

Conceptual Framework



5.3 Analysis of the Research Method

This section considers the research process aspects of the use of the action case research method and research protocol. Chapter 3 defined the research method and also defined a research protocol that included a research management section. This explained the potential use of the research space model to help in the management of the research study (Vidgen & Braa, 1997; Braa and Vidgen, 1999). Drawing on events from the fieldwork and relating these to the research space model, an explanation of how the research process changed during the study is presented below.

The research space model consists of a delimited space confined by aspects of purified research methods. Action case exists as a domain within this space and includes elements of intervention, interpretation and, to a lesser degree, scientific rigour. From this definition the researcher placed the intended research study within the research space, as seen in Figure 13, which depicts the amount of intervention that the researcher believed would be obtained, based upon the researcher's limited amount of research experience and the available access to the subject. The diagram also depicts the bias toward interpretation as opposed to prediction and scientific rigour.

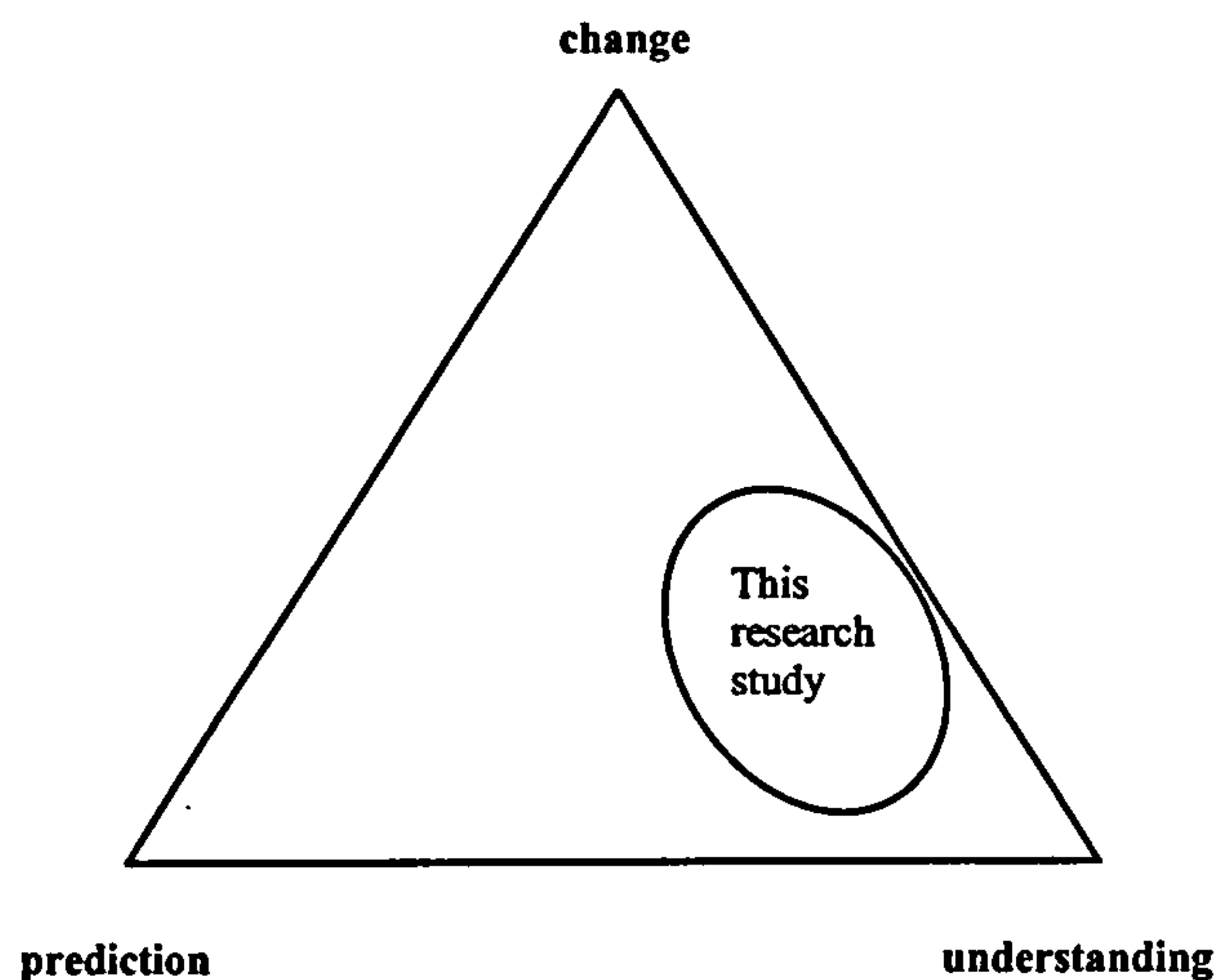


Figure 13 The intended research study

Once the researcher had entered the research subject and had begun the fieldwork proper, a relationship with members of the corporate policy unit was quickly formed. This led to a closer relationship with the unit and also helped with acceptance to the various community groups. For a period of time the researcher was actively involved with the project. At the same time, the researcher noted that personnel within the community groups were in a constant state of flux. Figure 1 depicts effects these events had on the research space model for this study. The role that the researcher was able to take at this time is reflected in the diagram by the arrow pulling the research space toward the change or intervention point within the model. At the same time, the continually changing personnel within the community groups and the initiative is depicted by a loss of prediction.

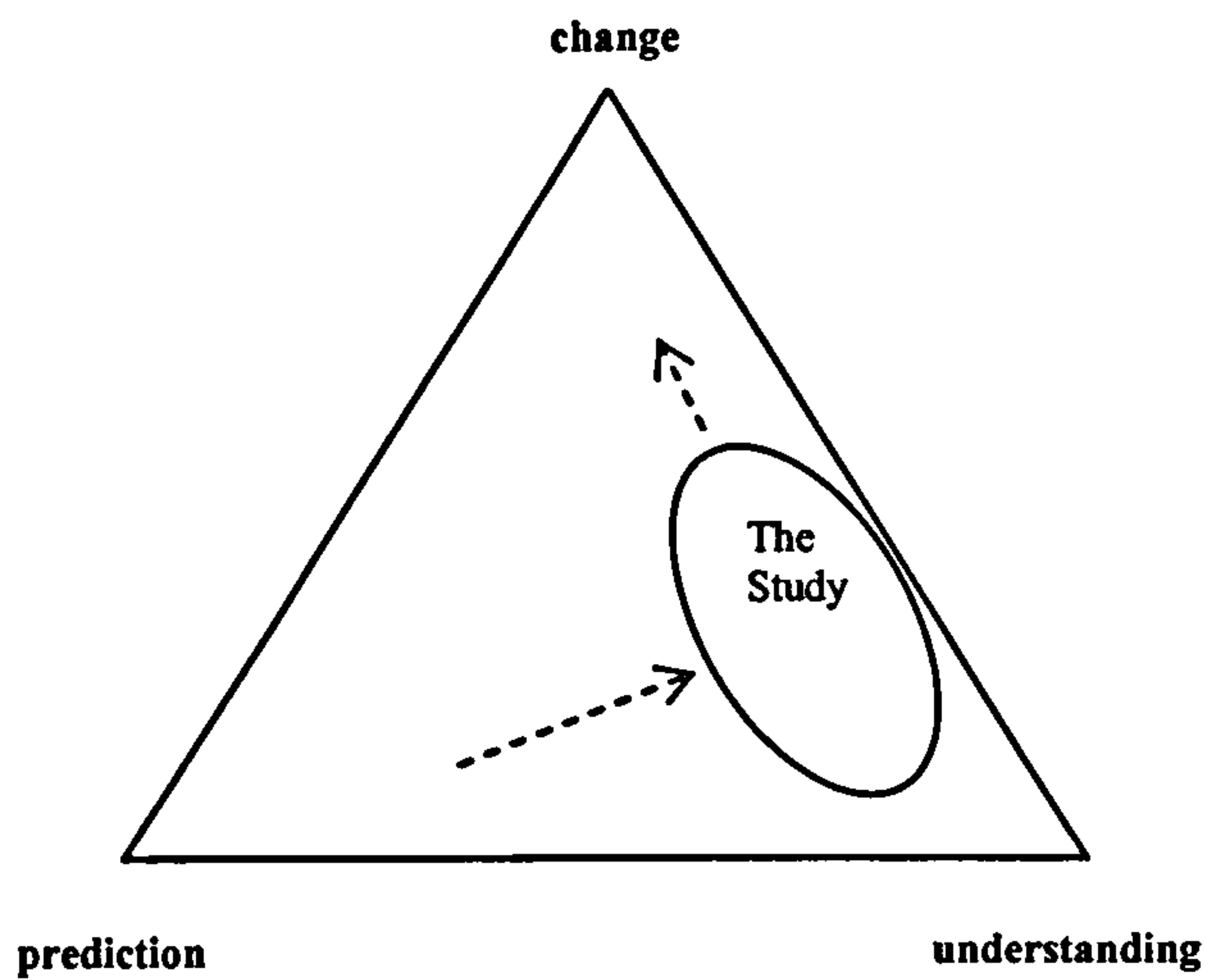


Figure 14 First changes to the research process

At some time during the fieldwork the constant changing of personnel began to include key members of the corporate policy unit and community groups. This affected the research process by preventing interaction with the main research subjects. This is depicted in Figure 15.

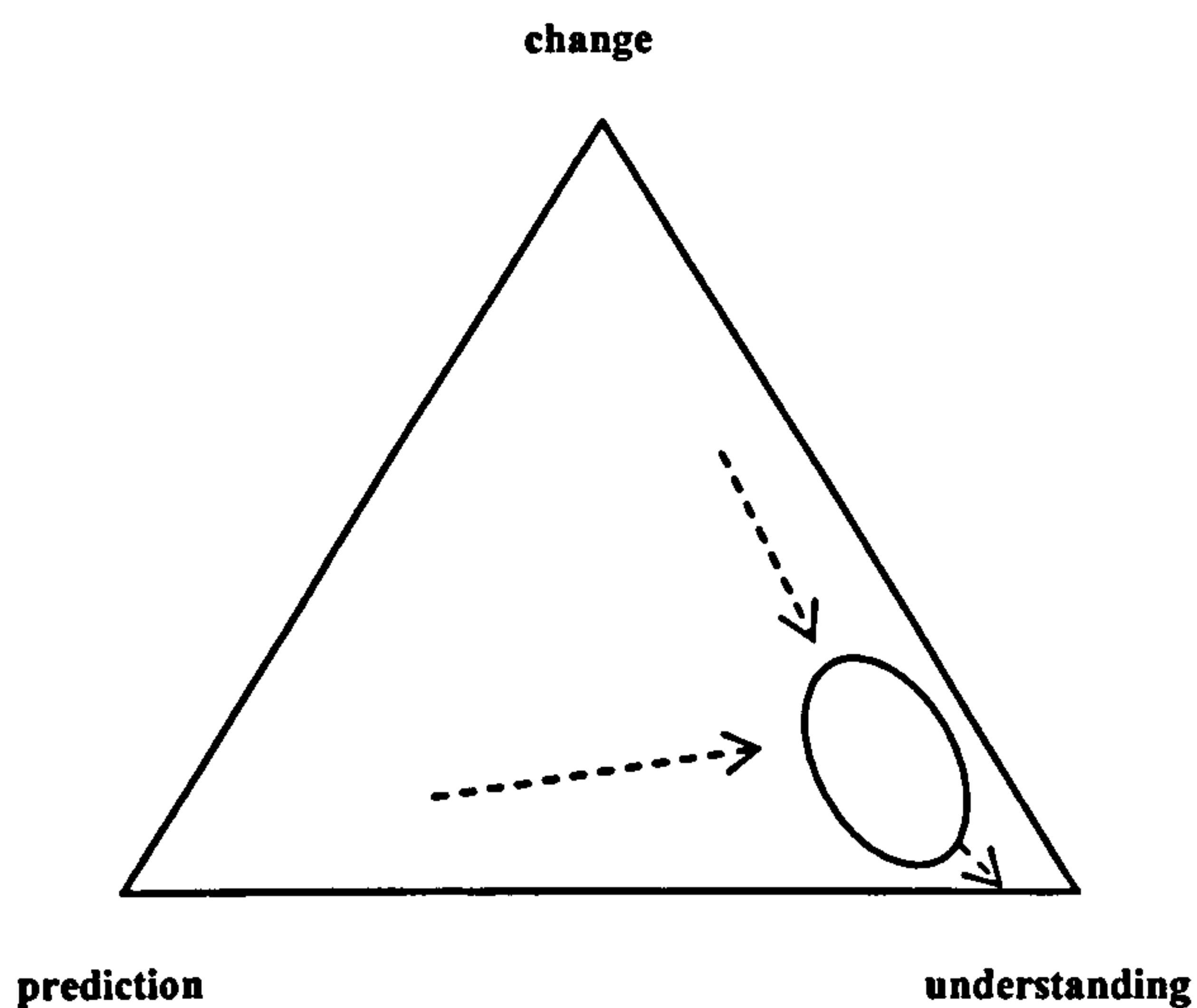


Figure 15 Further changes to the research process

Figure 15 shows how there was a loss of intervention or change as the research space contracted. Still present is the loss of prediction during major changes within the initiative. The arrow moving toward understanding both depicts the general move toward a more case orientated research process and the widening of the research to accommodate new research subjects. The widening of the research led to a greater understanding of some issues, for example, the idea of engagement and information delivery.

During the initial development of the research approach, the researcher attended a PhD consortium to gain differing views of IS research. During one meeting an idea of the IS research process was put to the participants that is in contradiction to the process above. The speaker presented IS research as a staged process that is linear in nature. A fellow participant turned to me and suggested that the process being put forward as ideal was in fact very similar to the waterfall development model. This model has received criticism from many within the IS discipline. At the time this idea did not sit well with the researcher. The researcher thought that if a process has been criticised for its ability to handle change within a development setting then such a process might be questionable from a research point of view. The events of this research study and the use of the research space model seem to offer a better choice for an IS research process, a process that can adapt to change (Vidgen and Braa, 1997).

The quote at the beginning of this chapter, taken from *Sophie's World* (Gaarder, 1991), neatly sums up yet another experience the researcher encountered during the fieldwork. This time, a meeting at Salford Council was arranged between the

researcher and members of the corporate policy unit. The researcher compiled an interview plan ready for the meeting, as any diligent research student would.. On arrival at the office, the researcher noticed a whiteboard diagram that rendered much of the interview plan irrelevant. Perhaps more importantly, after the researcher had drawn attention to the diagram a fruitful discussion followed. This discussion led to the consideration of divergent issues within the initiative. This is an example of the difference between research planning and context-based research. Contradictions are everywhere (Gaarder, 1991).

5.4 Chapter Summary

By considering the findings and results of the fieldwork, and by juxtaposing these in relation to the conceptual framework, this chapter has built upon the findings of the fieldwork, thereby providing greater analysis of the area of concern. This was partly achieved through a process of reflection, by returning to the framework of ideas. The chapter has also provided an analysis of the research process and discussed how the research method was applied and how the research process evolved over time. An important part of this research study has been the constant questioning of the research approach and the assumptions and perspective of the researcher. The next, and final, chapter summarises and evaluates the study. The chapter draws lessons and recommendations from this, and finally concludes the thesis.

Chapter 6

Summary and Conclusion

6.1 *Introduction*

The final chapter of the thesis presents summaries and evaluations and considers the main findings of the study. The process begins by summarising the preceding chapters and the research study as a whole. Secondly, the chapter considers the study in light of evaluation criteria or frameworks, then lessons and recommendations concerning the area of concern, the fieldwork and the research method are presented, following the work of Wood-Harper (1989). Finally, the chapter and research conclusion is presented.

6.2 *Chapter and Research Summaries*

The first chapter of this thesis provided the reader with an understanding of the research issue and its context. A statement of the area of concern was made thus: the introduction of information and communications technology (ICT) into the physical community, from an ethical viewpoint or stance. This selection was justified and a general approach for exploring the domain was presented. The chapter then focused more specifically on the area of concern by setting defined aims and objectives. These were formed from an initial discussion of the area's main themes. The chapter ended by introducing an ethical analysis framework that was used throughout the fieldwork part of the study.

Chapter 2 presented material, literature, and discourse relevant to the identified area of concern and the specified aims and objectives. Firstly, the notion of the

information society was presented to provide background to the area of concern. A substantial section of the chapter considered ethical theory and analysis techniques. This included material from the business ethics area and ethical discourse from the IS discipline. The next section expanded the operational aspects of the conceptual framework, specifically Soft Systems Methodology and stakeholder analysis. Finally, a second pass over the literature and discussion allowed for the creation of a conceptual framework, which was presented and examined in detail.

Chapter 3 detailed the selection of the action case research method used to address the area of concern. The chapter included a review of relevant IS research methods, a discourse on IS research topics and the selection of action case. This was achieved with reference to the previous sections and included a definition of the research protocol.

Chapter 4 detailed the fieldwork part of the study. This was initially presented as two main sections. The first section expressed the general observations that occurred to the researcher while conducting general interaction within the research subject, while the second section explained more specific research via the use of scenario descriptions. The chapter concluded by showing the interplay between the two sections or modes of research.

Chapter 5 drew from the findings and ideas from each of the preceding chapters. The chapter was reliant on a period of reflection that considered the main parts of the study against the conceptual framework developed in Chapter 2. Other ideas were included from the initial literature review and from other relevant material and

experiences. This not only allowed further discussion of important topics but also fulfilled a requirement of the research protocol.

6.3 Interpretative IS research frameworks

Following Nicholson (1999), this section of the chapter considers the research study through the lens of two frameworks for IS research evaluation. The two tables contain the questions that need to be considered by each framework, together with a short summary of the justification provided by the author. Further details of each answer are given in the passages that follow.

6.3.1 First Evaluation framework

Table 13 Interpretative Research Evaluation (Myers, 1997)

Criteria	Justification
Does the research make a contribution to the field? Has the author developed any new concepts or theories?	The research will make/ has made contributions to the field in a number of areas
Does the author offer rich insight into the human, social and organisational aspects of IT and their application?	Rich insight began with the description of the scenarios and continued through the analysis
Does the research contradict conventional wisdom and provide richer understanding?	The research contradicted the technological-led within information society research and gained insight by considering the non-technological

	implications
Has a sufficient quantity of data been collected for insights to emerge?	Chapter 4 provides insights that would not have been possible without sufficient fieldwork, for example, the security scenario
Are multiple viewpoints and alternate perspectives represented?	The researcher actively sought multiple perspectives from a wide range of participants within the research subject
Has sufficient information about the research method and process been presented?	The research method was detailed within a chapter that considered the underlying approach and the research protocol. Also, insights were presented by reference to the method and protocol

The criterion defined by Myers (1997) begins by considering the contribution a piece of research makes to a field, in this case the field of information systems. Subsequent sections of this chapter will detail a number of lessons that have been learned via the research study. The lessons are wide-ranging in manner, and bridge not only the specific subject matter, that of the introduction of ICT into physical communities, but also includes lessons concerning IS research methods, and considers the implications that the lessons have on the wider IS discipline. As far as developing new concepts or theories, the research study never considered this as a specific goal. Indeed the research study was focused mainly on an exploration of the subject area and not on theory development. The research method adopted was action-based but it was not a full implementation of action research, and therefore theory development was beyond

the study. However, a number of theories and concepts were explored during the study, and a number of developments emerged from the lessons learned. For instance, the notion of engagement is a significant step forward toward understanding how information technology can be used in a societal manner. The lessons also relate to ethical theories, such as the addition of the ethical principles of information technology within the ethical framework, together with a deeper understanding and development of the ethical analysis framework itself, leading to the development of in-situ ethical analysis

The second criterion defined by Myers (1997) asks for rich insight into the human, social and organisational aspects of the research study. It is argued that the richness within this study is best portrayed by the descriptions of the fieldwork. The researcher included the entrance into the subject as part of the fieldwork to explain why the members of the corporate policy unit granted access to the researcher and what they were looking for. This shows how close the researcher came to the subject and all of the participants therein and helped form the research findings and scenarios. The examination of the scenarios, and particularly the security scenario, highlights the richness of the work. The security scenario began through general observation and discussions, but then developed into a different issue that changed the views of the participants, effectively bringing them together. The richness of this scenario was a combination of research method, access and conceptual framework, all of which were used to expose the underlying complexities and hidden nuances of the situation.

Work that appraised information technology use in society uncovered a bias toward taking a technological-led or utopian view of the introduction of information technologies into society. This research study found that there was a diverse range of issues that arose from such an introduction of technology into a physical community. These issues ranged from structural, temporal, financial and sociological domains. Technology was seen as an important contributor but was not seen as sufficient for such endeavours. The study also contradicted a number of assumptions that were prevalent within the situation. These include the assumption that ethics is only for big questions, that ethics is only needed for certain areas of the project such as health-related issues. The study highlighted the need to look beyond the surface of 'harmless endeavours', for instance, in the planning decision scenario.

In addressing the second question within the Myers (1997) framework, the researcher singled out the security issues as being particularly rich. It is argued that for the issue to have developed through the original notion of a security issue where the participants had differing stances, to the notion of community integration that brought the participants together, required a lengthy process of engagement by the researcher. While the idea of quantity of data does not fit easily into the philosophical groundings of the researcher, it is argued that the richness of the general observational aspects and the specific scenarios would not have been possible without sufficient fieldwork.

Throughout the research study the author has sought the views and perspectives of a wide range of people. These include the wealth of views taken directly from the research subject, the participants in the community initiative, and other community workers. The author has also exposed the ideas that stemmed from the research to

colleagues and others to gain further views about the research findings and analysis, including well-respected figures who have been researching similar ideas across the IS discipline.

The final question posed by the Myers (1997) framework addresses the research method of the study. For this study, a review of current IS research methods, practice and concepts was conducted. This included the philosophical underpinnings of IS research, and an evaluation of method selection discourse. A method was chosen, partly by considering the research aims and theme against aspects of the action case method. After a method was chosen, a research protocol was defined to further aid the research process.

6.3.2 Second Evaluation Framework

Table 14 Principles for IS research evaluation (Klein and Myers, 1999)

Principle	Justification
The fundamental principle of the hermeneutic circle	Moving from general observations and action to deeper development of scenarios followed by analysis
The principle of contextualism	The researcher adopted a context-based research method and gained sufficient access to the subject to become involved in it
The principle of interaction between the	The researcher gained excellent access to

researcher and the subjects	a wide variety of subjects within the research domain
The principle of abstraction and generalisation	A form of generalisation was built into the research protocol. The fieldwork presented included analysis from an abstract level
The principle of dialogical reasoning	Contradictions or dialectics are everywhere (Gaarder, 199?)
The principle of multiple interpretations	The researcher actively sought multiple perspectives from a wide range of participants within the research subject
The principle of suspicion	The researcher was constantly aware of political and cultural aspects of the views of the research subjects

The first principle in the Klein and Myers (1999) framework relates to the importance of moving from the specific or general to the abstract and iterating between them. The fieldwork part of the study was conducted through general observations and action within the situation. The researcher became an active member of various community groups and was attached to official steering groups. Through this interaction, a number of important issues surfaced, and the researcher applied techniques from the ethical analysis framework and analysed what was involved. The results of the analyses were taken back into the community groups and further exploration was conducted. To complete the hermeneutic circle, Chapter 5 and some

of the research lessons below consider these results within the context of ethical analysis within the IS discipline.

It has been argued in this chapter and in previous chapters that the researcher sought to explore the area of concern, the introduction of ICT into physical communities, by researching from within a community undergoing such an initiative. To exercise this intention, a methodology that places a high value on the idea of context within IS research was adopted, the “organisational laboratory” (Vidgen and Braa, 1999). The researcher gained sufficient access to a community initiative and was able to gain close access to a number of community groups and leaders, including those within the corporate policy unit. Therefore, it is argued here that research study had a high contextual content and further that the contextual nature of the research led to important findings.

It is noted in the section above that the researcher gained access to a wide variety of people acting within the situation under investigation. The research also benefited from expanding the range of people and contact within the community. Initially, and justifiably, the researcher concentrated the focus in and around the corporate policy unit. Then, partly through this relationship, the researcher became more actively involved with the community groups directly within the initiative. Through events explained in previous chapters, the researcher was required to widen the scope of contacts beyond those directly related to the initiative, and while this was almost forced, a number of important ideas and findings were gained. Also in previous chapters of this thesis, the researcher has reflected on the withdrawal from the fieldwork. This was due to changes in personnel within the initiative and the lack of

access granted by the new leaders of the initiative. Thus, the researcher believes that sufficient contact with research subjects was achieved, and when close interaction with new people, after certain events, was not possible, the researcher withdrew from the fieldwork part of the study.

The principle of dialogical reasoning was most evident before the research proper commenced. As stated, the researcher began to consider the role of analysis and how explicit knowledge could be gained from the tacit knowledge of individuals within organisations. However, during this phase of the study the researcher questioned the motives behind the acquisition of tacit knowledge and began to look for ways to consider these questions. This prompted the researcher to be interested in ethical reasoning and theory. Throughout the study, the researcher has continually questioned the research approach, which is evident in the research method and protocol.

The evidence for the principle of multiple interpretations is present within the research approach, the conceptual framework, the analysis and descriptions from the fieldwork. The researcher chose a research method and protocol that required an interpretative approach to the exploration of the area of concern, and this set the foundation and allowed for multiple interpretations to be exposed. The conceptual framework includes techniques such as stakeholder analysis and elements from Soft Systems Methodology (Checkland, 1981; Checkland and Scholes, 1990) that enable multiple interpretations to become evident. Finally, the fieldwork expresses multiple viewpoints that were held by the research subjects. This is especially true for the

security scenario, where demonstrable multiple viewpoints of a singular event, the changes to school policy after attacks on school pupils and teachers, were evident.

The final principle devised by Klein and Myers (1999) considers the role of suspicion when considering the expressed views of research subjects. It is noted that research subjects may express views for political or cultural reasons and as such careful examination is required. During the researcher's time with participants of various community groups it became apparent that each member of the group had a different stake in the initiative. The chapter detailing the fieldwork expresses these views, and also highlights the impact of the changes of key personnel within the initiative, which strengthened the positions of the participants against a background of limited strategic plans. The researcher also noted the political nature of the denial of proper access by personnel that took over key positions within the corporate policy unit. While the above justification shows how the researcher was able to identify the underlying views of the research subjects, the researcher has also expressed the need to consider power relations within both community initiatives involving information technology and the power issues within ethical analysis.

6.4 *Summary of Fieldwork Contribution*

This section summarises some of the main findings from the fieldwork and considers the contribution such findings make to this research study. These contributions represent a major part in meeting the aims set out in Chapter 1. They detail an exploration of the research domain, allow for the exploration of the ethical analysis framework, and help answer the question concerning the role of ICT within information societal or community regeneration initiatives.

Firstly, the initial part of the fieldwork uncovered the divergent nature of the introduction of ICT into physical communities. The first lesson below details the divergent elements found within the community initiative. Considering this finding in relation to earlier work within this area highlights the weaknesses of taking a technological stance toward physical communities and ICT.

Secondly, each of the ethical framework-based scenarios offered insights into both the actual situations and the framework itself, thus:

- Contribution from the health scenario – as the first use of the conceptual framework, this was more of a learning process than the others. However, this work did uncover the notion of separating one stakeholder group into two or more, based upon different perspectives. Therefore, the process of considering perspectives and ethical stances is required to fully understand the stakeholders within a situation. It is a cyclical process
- Contribution from the planning scenario – here, the conceptual framework uncovered the stakeholders within the situation and ethical analysis was used to consider each stakeholder's ethical stances and perspectives. However, it was the application of the four ethical principles of technology (Wood-Harper, *et al*, 1999) that provided the most insight. These principles uncovered the underlying belief by members of the corporate policy unit that certain aspects of the project were beyond ethical concern, that ethics was only for “big” questions. The findings from this part of the fieldwork led to Lesson four

- Contribution from the security scenario – one of the most important findings from this scenario was how the ethical analysis framework can be used as a tool to increase debate and learning, possibly leading to greater understanding. It is also important to note that this was possible because the framework not only allows for the identification of stakeholder's ethical perspectives or stances but also exposes the latent issues within the situation

It should be noted that the contributions from the scenario-based research would not have been possible without the initial exploration and reading of the situation. As such, this is considered a contribution in itself. Ethical analysis cannot be fully realised without a considerable prior exploration of the situation; then, and only then, can one gain an understanding of the situation.

While the contributions that stemmed directly from the fieldwork are important, the creation and use of the conceptual framework led to significant findings. The use of the framework results in findings that are rigorously based upon a prior model. Additional conceptual analysis and reflection has significantly increased the lessons learned from the experience and has also increased their validity. The use of the conceptual framework, the resultant analysis and reflections, together with the contributions from the fieldwork, fully meet the aims and objectives, as detailed in Chapter 1 of this thesis.

6.5 Research Lessons

Lesson one – the introduction of information and communications technology into the physical community encounters a divergent set of issues

The research study found that a wide range of issues was prevalent within the community initiative. The project required the following to be considered:

- Structural or physical changes – the changes required to community buildings to ensure the distribution of services
- Funding – the task of matching grants from funding agencies
- Temporal – the time taken to achieve the information society, as opposed to the immediacy of the needs of the community
- Social and welfare – the need to generate and sustain a community spirit and to integrate the community's disparate groups
- Word of mouth – delivery of information throughout the community was thought to be by word of mouth for the foreseeable future
- Delivery of ICT through projects – by using the idea of holistic projects, it was hoped that a technological lead could be avoided and that the focus could remain on the needs of the community

Lesson two – the role of engagement is important to the idea of informed communities

The notion of engagement was one of the significant ideas that stemmed from the research study. The idea was developed by considering the role of information delivery and action within the community, together with discussion concerning the needs of community members. The essence of engagement is to not only to provide

information to community members, but also to encourage members to act on that information to become actively involved with information, and within the community. The theoretical underpinnings of this idea stem from the ideas of inquiry and knowledge, and how they relate to information (Churchman, 1971). As stated above, the revised conceptual framework includes a discrete section for engagement, which also encompasses the ideas of access, purposeful activity, a pro-active stance, the importance of stimulating interest and motivation, targeted services, and the importance of a local information and context

Lesson three – in-situ ethical analysis is appropriate for situations where information technology is applied to social areas, and may also be appropriate for other areas

Firstly, it is important to note the contrasts between the initial conceptual work at the outset of the study against both the ethical analysis framework (Wood-Harper, *et al*, 1996; Wood-Harper, *et al*, 1999) and the idea of in-situ ethical analysis. Initially the idea was to discover or predict the ethical stances of participants within ethical situations, based upon thinking style. The ideas behind ethical analysis, and especially in-situ ethical analysis, contrast this by only using ethical theories and models as a way of exploring the situation; the goal is to thoroughly explore the situation including latent issues in order to learn from it, to understand. The researcher considers this change in view as representing a process of learning, stemming from the earlier work and leading to the idea of in-situ ethical analysis, as developed in the previous chapter.

Lesson four – partnerships are important for the successful introduction of ICT into physical communities, and are complex in nature

While the role of partnerships was first encountered during the literature review, and included in the conceptual framework, the fieldwork part of the study confirmed and reinforced this. The fieldwork exposed a complexity in the use of partnerships; the leaders of the initiative cultivated different classes of partnerships to address different purposes or needs. The different classes included those at a strategic level, to provide ideas and best practice, an internal level, to ensure commitment, contribution and support from colleagues and internal departments, and an external level, to ensure broad coverage and to gain external expertise in important areas.

Lesson five – multiple access points are a useful approach to ensure a broad take-up of initiatives delivering information services to physical communities

As with the concept of partnerships, the use of multiple access points was also found in the literature and was included in the conceptual framework. It is included here as further evidence from the fieldwork highlights the importance of multiple access points. The fieldwork reinforced the idea that people may feel more comfortable entering one environment (access point), as opposed to another, and that by providing multiple environments there is a greater possibility of reaching more members of a community. The fieldwork also expanded the idea slightly, by introducing the notion of functional locations that provide tailored services in appropriate settings, in common with the initiatives idea of providing services rather than technological access points. It is also important to note the link between the idea of multiple access points and the structural divergent issue. It is clear that multiple access points require

physical changes within the community on a grander scale than single access point solutions.

Lesson six – an overall strategy is vital to the successful introduction of information technology into physical communities, and key individuals are important

With such complex projects, including diverse partnerships spanning the whole community, an overall strategy is required. This is essential to pull people together toward common goals, to ensure that the duplication of effort is reduced, and to deliver the right services. Key individuals such as project champions are important to this idea. The fieldwork provided evidence of this by showing the cohesiveness of the initiative during the early stages, where all participants had bought into the idea of the Little Hulton Community Campus, and indeed the project champion, and were working together to fulfil the strategy.

Lesson seven – the conceptual framework was useful during the research study and the revised framework represents a strong foundation for further research

The conceptual framework devised in Chapter 2 of this thesis was a useful way of considering the findings from the fieldwork against known ideas. After a period of reflection and analysis, the conceptual framework was revised and now represents a strong foundation for further research. The additional main sections concerning engagement and in-situ ethical analysis are important and are a direct result from reflection and analysis of the fieldwork. Other changes also reflect the interplay between the initial conceptual framework and the fieldwork; these include the addition of the diverse range of issues prevalent in the fieldwork and the idea of

ethical communities. Worth noting here is the applicability of the ethical section within the framework to other areas. The section stands on its own, allowing in-situ ethical analysis to be undertaken within the context of ethical theory and ideas supported by the operational ideas.

Lesson eight – technology has a limited but important role within initiatives that introduce information and communications technology into physical communities

Considering Lesson one, the divergent nature of the introduction of information and communications technology into the physical community, it is plausible that while technology has a role within such projects this role cannot and should not be central. Technology is an enabler of community regeneration.

Throughout the research study, the researcher was constantly aware of the need to improve the general living standards of the inhabitants of Little Hulton. There was a need to improve the environment where people lived, their access to work and shopping areas (mainly to improve choice) and the need to improve the social well-being of the residents. While information technology can help certain aspects of the situation, it is not a panacea.

Lesson nine – arguments based upon issues not being related to ethics, ‘the amoral arguments’, need to be countered

During this study, the fieldwork exposed assumptions held by participants within the community initiative. These assumptions considered certain aspects of the project to be beyond ethical thought. An ethical principle was applied to the situation in order

to consider the implications of this finding. The principle asks people involved in the delivery of IT/IS projects “to base [their] decisions or stances in ethical thought, or at least to justify [their] stance and make it explicit” (Wood-Harper, *et al*, 1999). It is important that the IS discipline addresses this issue, as it is necessary to counter this argument that issues can be unrelated to ethics.

Lesson ten – the power or political dimension cannot be ignored with reference to ethical analysis

Two findings from the fieldwork indicate that power relationships are important for ethical analysis of situations. The first finding was the belief that certain aspects of projects are beyond ethical thought, the belief that they do not have an ethical dimension. If important people involved in initiatives or projects that have the potential for profound societal impacts do not see the need to consider the situation from an ethical perspective then there will be barriers to proper ethical analysis of the situation. Secondly, if people are more interested in getting the job done, or in their own political progression, and do not give sufficient time for proper ethical analysis, then they are disregarding the people whom such projects impact. The conceptual framework used for this research study did not include notions of power and as such more work is required to properly consider the role of politics and power with reference to ethical analysis.

Lesson eleven – the ethical analysis framework is useful within context-based situations

The researcher has found the ethics-based framework useful for exploring issues of ethical concern. The framework allowed for an initial mapping of each situation. The

Soft Systems Methodology and stakeholder analysis elements of the framework underpinned this initial exploration and mapping, providing a solid base for further ethical thinking and analysis. Ethical thinking was conducted with reference to normative ethical theory and latterly by the inclusion of the ethical principles of technology. These provided a rich assortment of ideas that allowed a thorough examination of the ethical positions of those involved. This often led to the surfacing of latent issues that were taken back into the situation for further examination.

Lesson twelve – the action case method and models assist in the management of research in context

The researcher encountered a difficult and changing research subject. There were constant changes to personnel within the research subject. This had an impact on the continuity of access, impeded the examination of issues, and ultimately led to the cessation of the fieldwork. While there were obvious practical implications of these interruptions, the chosen research method aided in the consideration of the theoretical implications. The use of the research space model in Chapter 5 clearly shows how the research study progressed through three main stages.

6.6 Discussion

One of the main aims of this study has been to explore the introduction of information technology into physical communities, in this case, via a local government regeneration initiative. Initially, the researcher was concerned about the technological bias toward such initiatives and thus the idea of exploring the phenomenon was justified. A conceptual framework was formed and presented in Chapter 2, which enabled valid lessons to be learned from the fieldwork part of the study. Evidence

from the fieldwork matched some existing ideas, such as the role of partnerships and multiple access points. In these cases, the fieldwork expanded on these initial ideas and uncovered more complexity in their structure. Additional ideas not evident in the literature review or conceptual framework were also exposed by the fieldwork. One such discovery was the divergent nature or the wide range of issues touched by such initiatives. This provided a compelling argument against a technological bias. From this, the study concluded that while information technology has an important role in community regeneration it is not central to such endeavours. As introduced in Chapter 5, and noted in the lessons listed above, the notion of engagement is seen as a significant result, which stems from conceptual analysis and reflection, though it is rooted firmly in fieldwork. The notion of engagement has a solid theoretical grounding and has links to ideas from the conceptual framework, most importantly, to the idea of access. As such, engagement, as introduced by this study, represents a solid foundation for considering societal use of information technology.

As noted at the beginning of this thesis, research proper began with a conceptual study concerning the role of ethics within the IS discipline and accompanying methodologies. The researcher questioned the use of the concepts developed from these studies within real world situations. It was not perceived appropriate to assign ethical beliefs and the underlying reasoning behind these beliefs to actors within real situations. For example, it would have been inappropriate to brand a member of the corporate policy unit as being an ST psychological type, which may have led to him to the adoption of a deontological ethical stance. During the fieldwork part of the study, it became obvious that it is better to use the framework as a learning tool to consider ethical perspectives, rather than to attach them to people acting within the

situation. Moreover, the fieldwork demonstrated that people's views or perspectives are subject to change and are dependent on context. For example, consider the presentation and analysis of the 'security scenario'.

Considering the ethical framework in the light of the fieldwork, in Lesson eleven, the framework is indeed seen to be useful within real situations of ethical concern. The framework designed has understanding as one of its core principles. By using SSM as the foundation to explore the situation and expose that situation to ethical reasoning, the framework is biased toward exploring situations. As stated above in the contribution section and elsewhere within this thesis, the ethical framework seems to work best when used for understanding. To this end, the framework would benefit from the inclusion of the ethical principles of information technology, and ideas concerning the notion of in-situ ethical analysis, as described in Chapter 5 of this thesis.

The final scenario, the 'security scenario', produced a surprising result. In the earlier scenarios, the use of the ethical framework exposed the situation of ethical concern. Following this, analysis led to a greater understanding of that unique situation. However, during the security scenario the area of ethical concern under investigation actually changed during, and more importantly because of, the use of the ethical framework. The ethical framework exposed latent issues within the situation, and when this was put to the acting participants a debate ensued. Each of the participants considered the other perspectives and began to rest upon a conception of a new situation. Hence, the situation of concern changed from being a 'security' issue to being an issue of community integration. Following this and the discussion above, a

new model for the ethical analysis model has been devised and is presented in Figure 16 below. Based on understanding, it is a viable model for conducting in-situ ethical analysis.

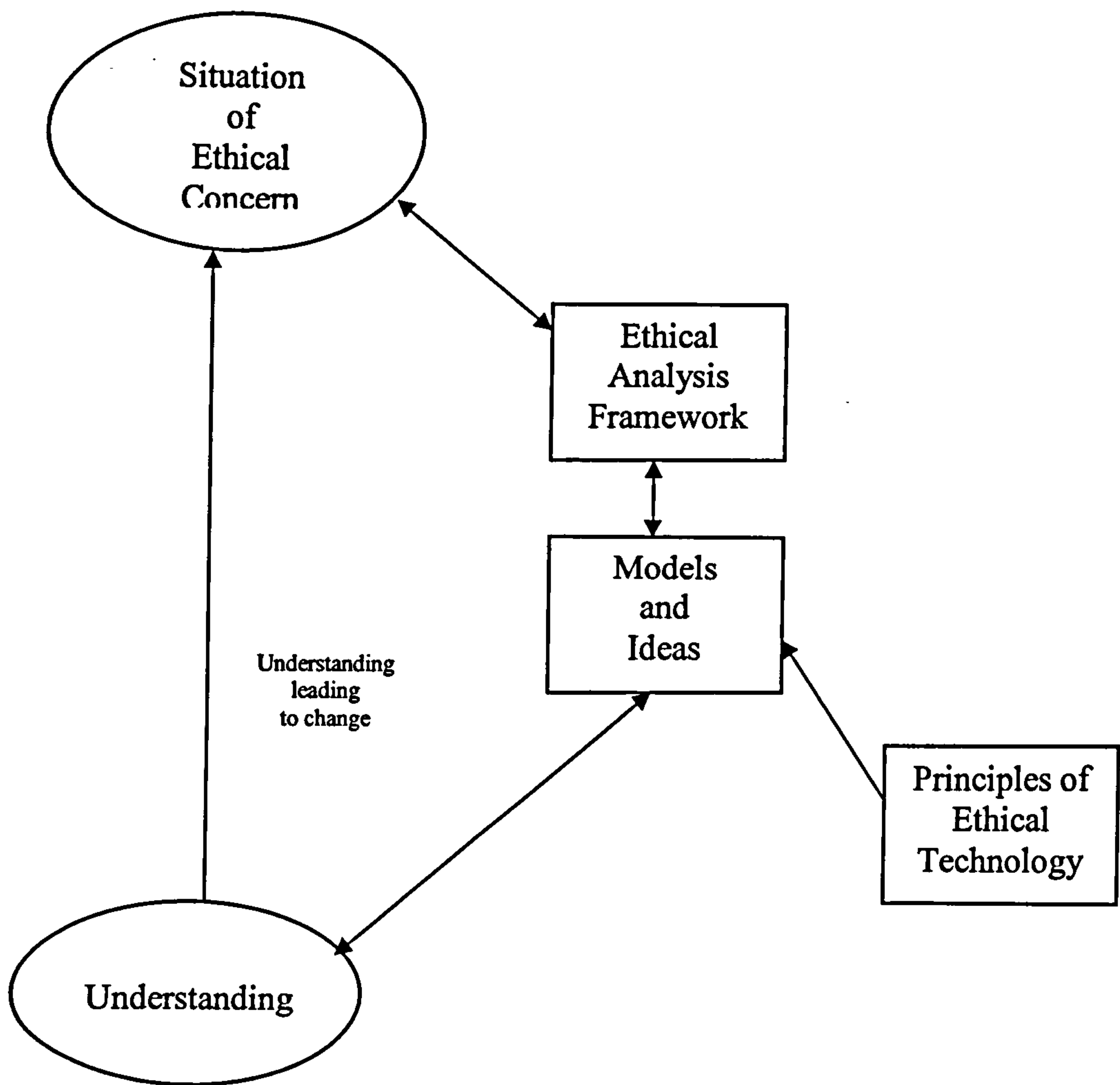


Figure 16 - New 'in-situ' Ethical Analysis Model

6.7 Recommendations

Recommendation one – the revised conceptual framework as developed and revised throughout this study is useful for similar research

The conceptual framework developed in Chapter 2 of this thesis was useful in order to gain and validate findings from the fieldwork. During analysis, this framework was revised to reflect the major findings of the fieldwork. As stated in the lesson above, the framework offers a comprehensive and tested model for similar research. Also noted above is the possibility of using the ethical side of the framework, including the operational ideas, for researching situations of ethical concern that differ from information societal issues.

Recommendation two – local government and others need to consider the divergent nature of the public introduction of information technology

It is important that those wishing to undertake initiatives similar to the Little Hulton Community Campus are aware of the divergent range of issues they will encounter. If too much emphasis is given to the technology then real harm can result from such interventions. The recognition of the diverse range of issues is also important with regard to achieving the best possible results from the intervention.

Recommendation three – more work is required to consider the introduction of information and communications technology into physical communities during a long-term project

While the above lessons indicate that the research study was fruitful, the aims of this study and other constraints limited it to exploration, which was necessary, given the general technological focus of similar research. Considering this limitation and the

problems of access encountered in the fieldwork part of the study, it seems appropriate that further longer-term research of this situation would be useful.

Recommendation four – ethical analysis, in particular in-situ ethical analysis, needs further exploration

Lesson six stated that the ethical conceptual framework was useful within the research study. There are a number of areas within the conceptual framework that require more work. These include the possible inclusion of the ethical principles of technology, the addition of methods to deal with power relations or politics.

Recommendation five – information systems research needs to address the contingent nature of research, and there is a need for methods that support novice researchers through change

This research study has highlighted the contingent nature of in-context information systems research, while the action case method provided a theoretical basis for considering the contingent nature of research. The researcher believes that approaches and techniques could be developed to help novice researchers deal with a changing research situation. at any rate At least, novice IS researchers should be made aware of the potential problems they may face.

Recommendation six – the ideas surrounding the notion of engagement offer a viable approach to the introduction of ICT into society at large and should be further researched and used in practice

The makeup and background to engagement has been noted in the lessons and discussion above, and in the previous chapter. The recommendation here is for

further research by the IS community. Practical use of the ideas would be beneficial to both the area where it is applied and research communities, if handled correctly.

Recommendation seven – the lessons, analysis and ideas from this study need broadening, possibly toward business use of information technology

The lessons learned from this research study need to be considered with reference to other similar studies. It may also be useful to take the ideas and lessons from this study and apply them to a completely different situation. Using the ethical side of the conceptual framework to investigate the business use of information technology from an ethical perspective would be one possible area: is the framework useful when considering the notion of a profit motive?

Recommendation eight – funding regimes and evaluation criteria with respect to such projects need changing; it is not appropriate to base funding judgements or evaluations on equipment numbers or on the number of users

The number of pieces of technology within a given community or the number of people using the technology is not a good measure of the successful introduction of such technology. The underlying reasons for the initiative offer more appropriate evaluation criteria. For instance, if an initiative is being used to tackle underachievement at school it is more appropriate to consider how the technology is leveraged to attain increased school-leaver performance.

6.8 Conclusion

This research study began with an initial concern for the introduction of information and communications technology into the physical community. The research aims and objectives were based on an ethical exploration of the issues involved in such

endeavours. These aims and objectives have been met through fieldwork, via action case, and the use of a conceptual framework, further analysis and reflection have broadened and deepened this contribution. A number of lessons and recommendations have resulted from an exploration of the Little Hulton Community Campus Initiative. Mitroff (1983) states the importance of storytelling and suggests that it is fundamentally a human concept. Using this, and following Wood-Harper (1989) and Morgan (1996), this research has not tried to prescribe solutions or create theory but merely to tell the story of an ethical exploration of a community initiative. It is now in the hands of others, who can apply my ideas to their situation or situations similar to mine, using the revised conceptual framework and the lessons and discussions above.

To conclude this thesis the following passage seems appropriate:

“We must reinstate the idea of living an ethical life as a realistic and viable alternative to the present dominance of materialist self-interest” (Singer, 1993).

Appendix A

City of Salford – Information Society Report

The following information is taken from the City of Salford: Information Society Report 2002 and represents current thinking and policies leading from the Little Hulton Community Campus Initiative.

“The Information Society has arrived. It is impacting on all aspects of human activity. For the first time, *information* and *communication* technologies are being brought together and have the potential to significantly improve quality of life.”

We Wish To:

- *"Begin consultation with Elected Members, Directorates, and the Trade Unions to help decide the future provision of Information Society developments..."*
- *"Begin consultation with suppliers, partners and agencies..."*
- *"Undertake early work...with the aim of having a pilot Call Centre and One Stop Shop in place by the end of Year One"*
- *"Recommend that a future detailed business case will be submitted as the work programme develops..."*
- *"Recommend that appropriate Project Management structures are put in place"*

And:

- *Provide a framework for the effective and integrated delivery of services in the Information Society, including closer working with partners and agencies*
- *Identify how Information and Communication Technologies (ICT) can be exploited for the benefit of citizens, businesses and employees of Salford City Council*
- *Focus on improvements to the 'people' side of the Information Society by setting out a five-year vision for Salford City Council, identifying the key requirements for delivery*

"The Information Society has the potential to make a significant contribution to the City Council's objectives, helping to build a better future, and to achieve:"

"The Best Possible Quality of Life for the People of Salford."

Key Benefits - realised through the Information Society:**Improve Service Delivery:**

- Deliver economies of scale; help the Authority become more effective and efficient
- Reduce operational costs by streamlining processes, enabling performance, quality and service improvements
- Achieve Best Value through delivery of high quality, joined-up services
- Enable better performance measurement, enabling improved decision-making
- Contribute to regional and national Information Society strategies, enabling joined-up government

Combat Social Exclusion:

- Improve access to knowledge and information
- Enhance access to learning resources, health and social care, contributing to prosperity and well-being
- Provide more opportunities for education and personal development
- Enable better government with more community participation in local decision-making

Develop the Local Economy:

- Enable wider access to distant information sources and markets
- Improve access to specialist business services from providers outside the area
- Acquire new skills and knowledge that adds value to the business and to employees
- Attract inward investment and new business to the area

Key Work Programmes:

- *One Stop Shop / Call Centre*
- *Office Automation / Back Office Strategy*
- *Business Process Re-Engineering*
- *Human Resource Strategy*
- *Communications Strategy*
- *Homeworking / Teleworking*

- *Social Inclusion*
- *Economic Development*
- *Digital iTV*
- *SMART card technology*

The Regeneration Perspective

Over the past 30 years, Salford has seen great change, losing almost a third of its employment base. It has been remarkably successful in tackling the resulting social and physical dereliction, but much more needs to be done. A summary of the main areas to be addressed is outlined below:

Unemployment - Overall, the unemployment rate in Salford is slightly above the national average. However, in some wards the unemployment rate is as high as 11.1%. Long term employment is a significant issue, with 19.7% having been unemployed for over a year (Figures as at April 1998).

Social Disadvantage – 29.6% of households are in receipt of Housing Benefit and 34% in receipt of Council Tax benefit. 33% of all Salford pupils receive free school meals. Salford is the 23rd most deprived district in the country (DETR Index 1998).

Education - One third of economically active people in Salford have no qualifications. While Salford children fare well at primary school, there is a clear lack of progress at secondary school, reflected in the generally poor results, particularly in performance at GCSE level, where 10% fewer pupils than the national average leave school with 5 or more GCSEs.

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